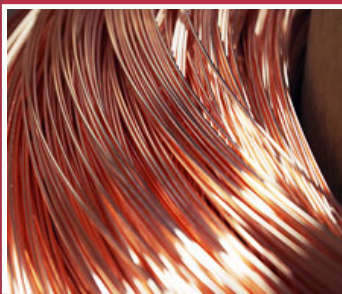




## PRODUCT CATALOGUE



# TROPICAL CABLE & CONDUCTOR LTD



**Website:** [www.tropicalcables.com](http://www.tropicalcables.com)  
**Location:** No. 42 Steel Works Road,  
Heavy Industrial Area, Tema Ghana.

**ISO 9001 CERTIFIED** 







# TROPICAL CABLE & CONDUCTOR LTD



**MANUFACTURING IS THE BEDROCK OF SOUND ECONOMIES AND THRIVING SOCIETIES**

SIR NICHOLAS SCHEELE (GLOBAL PRESIDENT AND CHIEF OPERATING OFFICER, FORD MOTOR COMPANY)

**IMPORTANT NOTICE:**

AS A GROWING COMPANY, OUR PRODUCT RANGE IS EXPANDING RAPIDLY. IF YOU DO NOT FIND YOUR REQUIREMENT IN THIS CATALOGUE, PLEASE CONTACT US AT [info@tropicalcables.com](mailto:info@tropicalcables.com), [sales@tropicalcables.com](mailto:sales@tropicalcables.com)

WE MAY HAVE ADDED YOUR REQUIREMENT AFTER PRINTING OF THIS CATALOGUE.



**ISO 9001 CERTIFIED**



# COMPANY AWARDS



**GHANA CLUB 100 AWARDS**

# COMPANY AWARDS



**NATIONAL QUALITY  
AWARD**  
(LEADER IN THE  
MEDIUM ENT.  
CATEGORY  
OF THE ELECTRONIC &  
ELECTRICAL SECTOR)



**MANUFACTURING  
COMPANY OF THE YEAR  
2007**



**ENABLIS AWARD IN  
RECOGNITION OF SUPPORT  
FOR SME DEVELOPMENT IN  
GHANA**



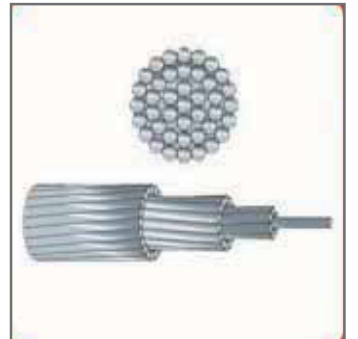
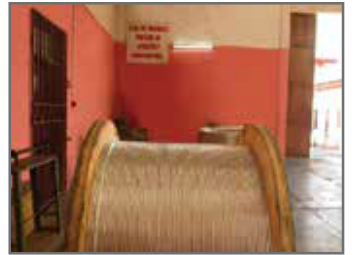
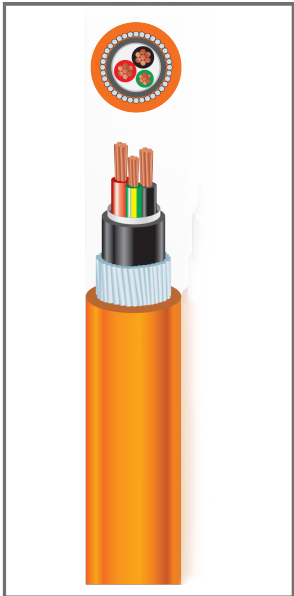
**AGI AWARD FOR BEST  
ELECTRICALS AND  
ELECTRONICS COMPANY**



**EMPRETEC FASTEST GROWING COMPANY**



**GHANA STANDARDS BOARD AWARD IN RECOGNITION OF STANDARDS  
DEVELOPMENT AND APPLICATION IN GHANA**

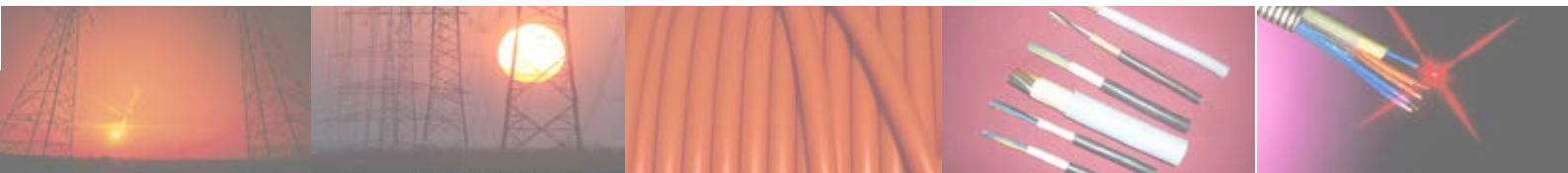






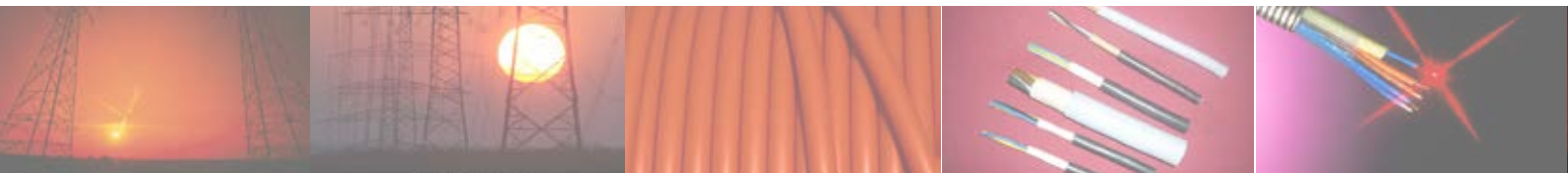
# TABLE OF CONTENTS

|   |              |
|---|--------------|
| Introduction to TCCL  | 11           |
| Our Mission Statement   | 12           |
| Vision Statement  | 12           |
| Quality Policy  | 12           |
| Brief Description of TCCL's Quality Assurance   | 12           |
| Properties of Conductor Materials   | 13           |
| Maximum d.c. conductor resistance, IEC 60228, Conductor: Annealed Plain Copper Class 1, 2 & 5 | 14           |
| Maximum d.c. conductor resistance, IEC 60228, Conductor: Aluminium Class 2                    | 15           |
| Current carrying capacity of conductors   | 16-17        |
| <b>CONDUCTORS OF OUR MANUFACTURE - OVERHEAD LINE CONDUCTORS</b>                               | <b>19-20</b> |
| All Aluminium Conductor (AAC) - BS 215 Part 1   | 21           |
| All Aluminium Conductor (AAC) - IEC 61089   | 22           |
| All Aluminium Conductor (AAC) - ASTM B 231  | 23           |
| Aluminium Conductor Steel Reinforced (ACSR) - BS 215 Part 2                                   | 24           |
| Aluminium Conductor Steel Reinforced (ACSR) - ASTM B 232/232M                                 | 25 - 29      |
| Aluminium Conductor Steel Reinforced (ACSR) - IEC 61089                                       | 30           |
| Aluminium Conductor Steel Reinforced (ACSR) - NFC 34-120                                      | 31           |
| Aluminium Alloy Conductor (AAAC) - NFC 34-125   | 32           |
| Aluminium Alloy Conductor (AAAC) - BS 3242  | 33           |
| Bare Aluminium Overhead Line Conductor - ECG E-9 Specification/ BS 215 Part 1                 | 34           |
| Bare Copper Overhead Line (COHL) - ECG E-9 Specification / BS 7884                            | 35           |
| Bare Copper Overhead Line (COHL) - BS 7884  | 36           |
| Bare Copper Annealed Conductor  | 37           |
| PVC Insulated Single-Core Cable with Hard Drawn Copper / Aluminium Conductor -BS 6485         | 38           |



## TABLE OF CONTENTS (CONTINUATION)

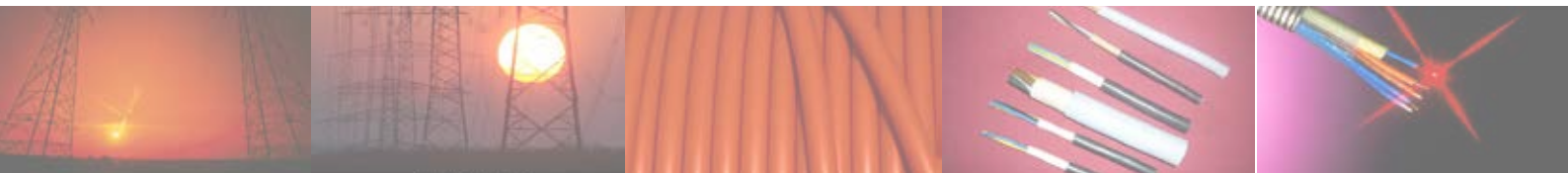
|   |                |
|---|----------------|
| PVC Insulated Single-Core Cable with Hard Drawn Copper / Aluminium Conductor<br>- ECG E-9 Specification (LV & HV)   | 39             |
| PVC Insulated PE Sheathed Twin-Core Cable 600/1000V   | 40             |
| Low Voltage Aerial Bundled Conductor - BS 7870-5  | 41             |
| <b>ALUMINIUM AND COPPER WIRES AND CONDUCTORS</b>  | <b>42</b>      |
| Aluminium Wires - IEC 61089   | 43             |
| Copper Wires - BS 7884, Aluminium and Copper Binding Wires ECG E-11 Specification                                   | 44             |
| Copper Annealed Wire (Soudronic Welding Wire)   | 45             |
| <b>CABLES OF OUR MANUFACTURE - LOW VOLTAGE POWER CABLES</b>   | <b>47 - 48</b> |
| Single Core PVC Insulated Unarmoured Cables for Voltages of 600/1000V, IEC 60502-1                                  | 49             |
| PVC Insulated Multicore Unarmoured Cables for Voltages of 600/1000V, IEC 60502-1                                    | 50-51          |
| Control Cables for Voltages of 600/1000V, IEC 60502-1   | 52             |
| Thermosetting Insulated (XLPE) Unarmoured Cables for a Voltage of 600/1000V - BS 7889                               | 53             |
| XLPE Insulated Unarmoured Cables for Voltages of 600/1000V - IEC 60502-1  | 54-58          |
| PVC Insulated Armoured Cables for Voltages of 600/1000V - IEC 60502-1   | 59-63          |
| PVC Insulated Armoured Cables for Voltages of 600/1000V - IEC 60502-1<br>Armoured Auxiliary Cables                  | 64-65          |
| Armoured Electric Cables with Thermosetting Insulation (XLPE) 600/1000V, IEC 60502-1                                | 66-69          |
| Screen cables: XLPE Insulated Multicore Control Screened Cables for Voltages of 600/1000V<br>- IEC 60502-1          | 70             |
| <b>CABLES OF OUR MANUFACTURE - NON-SHEATHED CABLES FOR FIXED WIRING</b>   | <b>72-73</b>   |
| Single Core Non-sheathed Cables with Rigid Conductor for General Purposes, 450/750V<br>- GS IEC 60227-3, BS 6004    | 74             |
| Single Core Non-sheathed Cables with Flexible Conductor for General Purposes, 450/750V<br>- GS IEC 60227-3, BS 6004 | 75             |





## TABLE OF CONTENTS (CONTINUATION)

|  |              |
|--|--------------|
| Single Core Non-sheathed Cable with Solid/Flexible Conductor for Internal Wiring for a Conductor Temperature of 70°C, 300/500V - GS IEC 60227-3, BS 6004 | 76           |
| Single Core Non-sheathed Cable with Solid/Flexible Conductor for Internal Wiring for a Conductor Temperature of 90°C, 300/500V - GS IEC 60227-3, BS 6005 | 77           |
| <b>CABLES OF OUR MANUFACTURE - SHEATHED CABLES FOR FIXED WIRING &amp; FLEXIBLE CABLES</b>  | <b>78-79</b> |
| PVC Insulated PVC Sheathed Flat Twin Cable Voltages of 300/500V - BS 6004  | 80           |
| Light Polyvinyl Chloride Sheathed Cable, 300/500V - GS IEC 60227-4, BS 6004  | 81-85        |
| Light Polyvinyl Chloride Sheathed Cord, 300/500V - GS IEC 60227-5, BS 6500   | 86           |
| Ordinary Polyvinyl Sheathed Cord, 300/500V - GS IEC 60227-5, BS 6500   | 87           |
| Heat Resistant Light PVC Sheathed Cord for a Maximum Temperature of 90°C - GS IEC 60227-5, BS 6500   | 88           |
| Heat Resistant Ordinary PVC Sheathed Cord for a Maximum Temperature of 90°C - GS IEC 60227-5, BS 6500  | 89           |
| <b>CABLES OF OUR MANUFACTURE - TELECOMMUNICATION CABLES</b>  | <b>91-92</b> |
| Telecommunication cables<br>Telephone drop wire, Jumper wire, Internal PVC wire  | 93           |
| <b>ABBREVIATION</b>  | <b>94</b>    |



# SGS

Certificate GH10/2010

The management system of

## Tropical Cable and Conductor Ltd

No. 42, Steel Works Road, Heavy Industrial Area, P.O. Box SC 241,  
Tema, Ghana

has been assessed and certified as meeting the requirements of

### ISO 9001:2015

For the following activities

**Manufacture and sale of aluminum and copper overhead line  
conductors, insulated and sheathed cables, armoured/unarmoured  
power and control cables, and telecommunication cables**

Further clarifications regarding the scope of this certificate and the applicability of  
ISO 9001:2015 requirements may be obtained by consulting the organisation

This certificate is valid from 21 May 2016 until 21 May 2019 and  
remains valid subject to satisfactory surveillance audits.  
Re certification audit due before 30 April 2019  
Issue 4. Certified since May 2004

Authorised by

SGS United Kingdom Ltd  
Rossmore Business Park, Ellesmere Port, Cheshire, CH65 3EN, UK  
t +44 (0)151 350-6666 f +44 (0)151 350-6600 [www.sgs.com](http://www.sgs.com)

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Page 1 of 1



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## INTRODUCTION TO TCCL

From its beginnings in 1997 **Tropical Cable and Conductor Ltd.** has made impressive progress. We have grown our production capacity to over 5,000 tonnes of Aluminium and Copper annually. This phenomenal growth has been achieved by manufacturing world class quality conductors and cables for West Africa's energy sector.

Tropical Cable and Conductor's remarkable growth is embellished by a number of firsts.

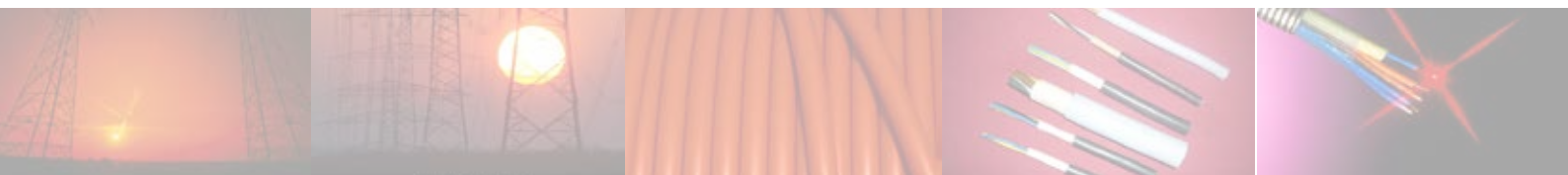
On incorporation in 1997, it became the first wholly Ghanaian owned manufacturer in this technologically challenging area.

- In 2003, the company was the first cable manufacturing company to be listed in the prestigious Ghana Club 100 (a listing of Ghana's top 100 companies). TCCL has continued to feature regularly on the list.
- In 2004, the quest for excellence in cable manufacturing was further enhanced with the certification of the quality management system to the internationally acclaimed ISO 9001 Quality Management Systems Certification. Tropical Cable and Conductor Ltd. was the first cable manufacturer in West Africa to achieve the certification. Over the years we maintained the certification, and in 2016 we achieved re-certification of our quality management system to the latest edition of ISO 9001: 2015 quality management system standard. Again, we were the first cable manufacturer in West Africa and the first manufacturing company in Ghana to attain it.
- TCCL's excellent technical and marketing expertise have seen it's market share increase steadily in the highly competitive market. As a result of superior understanding of customers' needs the company strategically commissioned new armouring line in 2006 for the manufacture of underground power cables. The company was the first manufacturer of armoured cables in Ghana.
- In 2015, TCCL became the first cable manufacturer in Ghana to commence compounding of its own insulation and sheathing materials. This has improved the competitiveness of the company.

The company has committed significant resources to the aid of the under privileged in society. We have offered financial assistance to medical students to study abroad, donated electric cables to institutions such as the Ghana Police and various schools, equipped classrooms in deprived communities, etc.

In 2010, TCCL launched the Tropical Saint Anthony Foundation which is now Tropical Students Support Initiative (TSSI). This foundation provides scholarships to needy students admitted to undergraduate programs in the University of Ghana. There is a special emphasis on young ladies studying Science and Mathematics.

In the next decade we intend to increase our efforts and consolidate our vision of becoming an African Industrial Giant in cable and conductor manufacture.



## OUR MISSION STATEMENT

We use the best human and material resources for the profitable manufacture and marketing of excellent quality cables and conductors.

## VISION STATEMENT

To become an African Industrial Giant in cable manufacture and marketing.

## QUALITY POLICY

Tropical Cable and Conductor Limited (TCCL) is committed to excellence in the manufacture and marketing of cables and conductors and to achieving customer satisfaction.

In this regard, we strive to:

- utilise the best available human and material resources to manufacture our products efficiently and profitably,
- set and review quality objectives at relevant functions,
- satisfy and comply with applicable requirements related to our industry, products and services, as applicable,
- continually monitor and analyse customer feedback and process performances with the aim to enhance customer satisfaction,
- maintain environmentally friendly and sustainable manufacturing practices,
- continually review and improve our quality management system.

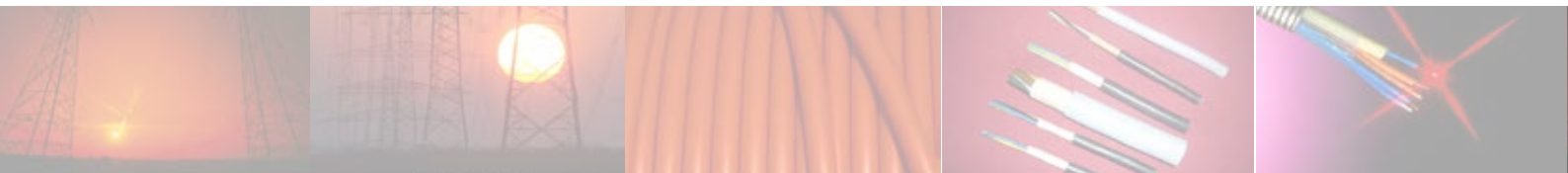
## BRIEF DESCRIPTION OF TCCL'S QUALITY ASSURANCE

TCCL runs a quality management system based on the requirements of ISO 9001. Our quality management system has been assessed and certified as meeting the requirements of ISO 9001.

TCCL's Quality Assurance system for inspection, monitoring and testing ensures conformity of product to specified requirements from Receipt of Raw Materials to Despatch to Customer. It includes:

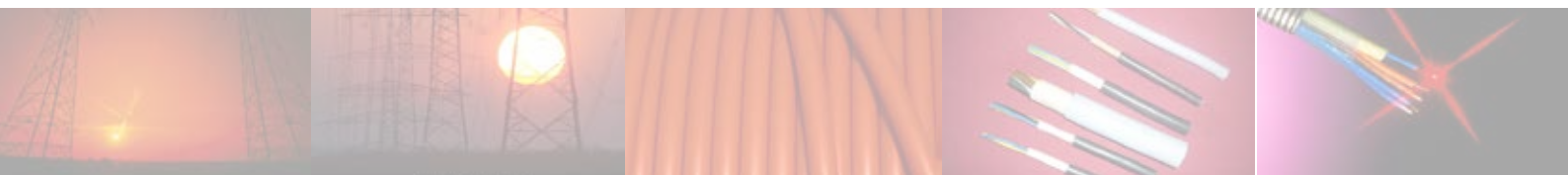
- a. Raw Material Receiving Inspection and Verification: each receipt of Raw Material is inspected and verified for the right type of quality as set in Raw Material Specifications and Raw Materials Supplier's Certificate of Analysis.
- b. In- process (routine) testing ensures that the product meets the specified requirements at all stages of production processes.
- c. Final testing and inspection further ensures the conformity of the product to Specifications.
- d. Receiving to Stores and during the despatch to customers: the product is inspected before it is received into stores and during the despatch to customers.
- e. Customer Feedback: Regular communication with our customers further ensures that customer needs and expectations are continually met and exceeded.

The quality management system is continually reviewed for improvement of the performance of system's process.



**PROPERTIES OF CONDUCTOR MATERIALS**

| Properties                                     | Units                              | Aluminium | Aluminium Alloy | Galvanized Steel | Copper  |
|--|------------------------------------|-----------|-----------------|------------------|---------|
| Conductivity                                   | %IACS                              | 61        | 53              | 9                | 100     |
| Resistivity                                    | Ohm x mm <sup>2</sup> /km          | 28.264    | 32.5            | 192              | 17.241  |
| Temperature co-efficient of resistance at 20°C | -                                  | 0,00403   | 0,0036          | 0,0054           | 0,00381 |
| Coefficient of Linear expansion                | x10 <sup>-6</sup> /°C              | 23        | 23              | 11.5             | 17      |
| Density at 20 °C                               | kg/m <sup>3</sup>                  | 2,703     | 2,700           | 7,800            | 8,890   |
| Linear Mass                                    | kg/mm <sup>2</sup> km              | 2.703     | 2.7             | 7.8              | 8.89    |
| Ultimate Tensile Stress                        | N/mm <sup>2</sup>                  | 160-200   | 295             | 1,320-1,700      | 370     |
| Modulus of Elasticity                          | N/mm <sup>2</sup> x10 <sup>3</sup> | 70        | 70              | 200              | 125     |



## MAXIMUM D.C CONDUCTOR RESISTANCE

IEC 60228

### CONDUCTOR: ANNEALED PLAIN COPPER CLASS 1, 2 & 5

| Nominal cross-sectional area | Class conductor | Max. d.c conductor resistance @20°C |
|------------------------------|-----------------|-------------------------------------|
| mm <sup>2</sup>              | -               | Ohm/km                              |
| 0.75                         | 5               | 26                                  |
| 1.00                         | 5               | 19.5                                |
| 1.5                          | 1, 2            | 12.10                               |
|                              | 5               | 13.30                               |
| 2.5                          | 1, 2            | 7.41                                |
|                              | 5               | 7.98                                |
| 4                            | 1, 2            | 4.61                                |
|                              | 5               | 4.95                                |
| 6                            | 1, 2            | 3.08                                |
|                              | 5               | 3.30                                |
| 10                           | 2               | 1.83                                |
|                              | 5               | 1.91                                |
| 16                           | 2               | 1.15                                |
|                              | 5               | 1.21                                |
| 25                           | 2               | 0.727                               |
|                              | 5               | 0.780                               |
| 35                           | 2               | 0.524                               |
|                              | 5               | 0.554                               |
| 50                           | 2               | 0.387                               |
|                              | 5               | 0.386                               |

| Nominal cross-sectional area | Class conductor | Max. d.c conductor resistance @20°C |
|------------------------------|-----------------|-------------------------------------|
| mm <sup>2</sup>              | -               | Ohm/km                              |
| 70                           | 2               | 0.268                               |
|                              | 5               | 0.272                               |
| 95                           | 2               | 0.193                               |
|                              | 5               | 0.206                               |
| 120                          | 2               | 0.153                               |
|                              | 5               | 0.161                               |
| 150                          | 2               | 0.124                               |
|                              | 5               | 0.129                               |
| 185                          | 2               | 0.0991                              |
|                              | 5               | 0.1060                              |
| 240                          | 2               | 0.0754                              |
|                              | 5               | 0.0801                              |
| 300                          | 2               | 0.0601                              |
|                              | 5               | 0.0641                              |
| 400                          | 2               | 0.0470                              |
|                              | 5               | 0.0486                              |
| 500                          | 2               | 0.0366                              |
|                              | 5               | 0.0384                              |
| 630                          | 2               | 0.0283                              |
|                              | 5               | 0.0287                              |
| 800                          | 2               | 0.0221                              |
| 1000                         | 2               | 0.0176                              |





**MAXIMUM D.C CONDUCTOR RESISTANCE**

IEC 60228

**CONDUCTOR: ALUMINIUM CLASS 2**

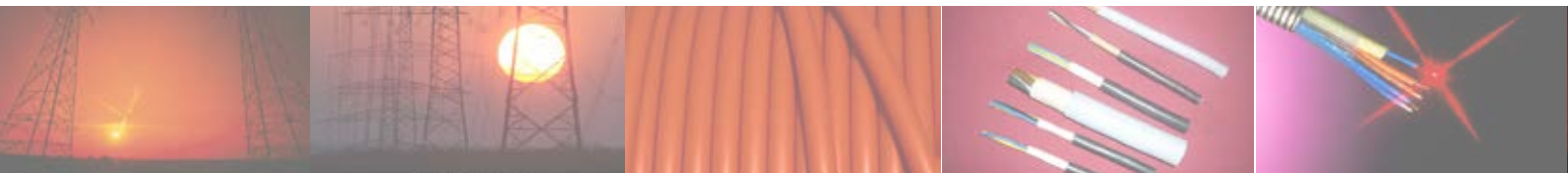
| Nominal cross-sectional area | Max. d.c conductor resistance @20°C |
|------------------------------|-------------------------------------|
| mm <sup>2</sup>              | Ohm/km                              |
| 10                           | 3.08                                |
| 16                           | 1.91                                |
| 25                           | 1.200                               |
| 35                           | 0.868                               |
| 50                           | 0.641                               |
| 70                           | 0.443                               |
| 95                           | 0.320                               |
| 120                          | 0.253                               |
| 150                          | 0.206                               |

| Nominal cross-sectional area | Max. d.c conductor resistance @20°C |
|------------------------------|-------------------------------------|
| mm <sup>2</sup>              | Ohm/km                              |
| 185                          | 0.164                               |
| 240                          | 0.125                               |
| 300                          | 0.100                               |
| 400                          | 0.0778                              |
| 500                          | 0.0605                              |
| 630                          | 0.0469                              |
| 800                          | 0.0367                              |
| 1000                         | 0.0291                              |



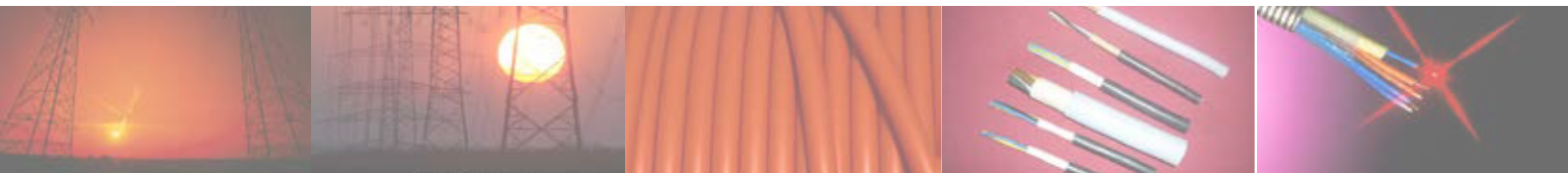
## CURRENT-CARRYING CAPACITY OF CONDUCTOR

| Nominal cross-sectional area |                             | Continuous Current |           |                  |
|------------------------------|-----------------------------|--------------------|-----------|------------------|
| Copper, Aluminium conductor  | Aluminium/ steel conductors | Copper             | Aluminium | Aluminium/ steel |
| mm <sup>2</sup>              | mm <sup>2</sup>             | A                  | A         | A                |
| 10                           |                             | 90                 |           |                  |
| 16                           | 16/2.5                      | 125                | 110       | 105              |
| 25                           | 25/4                        | 160                | 145       | 140              |
| 35                           | 35/6                        | 200                | 180       | 170              |
| 50                           | 50/8                        | 250                | 225       | 210              |
| 70                           | 70/12                       | 310                | 270       | 290              |
| 95                           | 95/15                       | 380                | 340       | 350              |
| 120                          | 120/20                      | 440                | 390       | 410              |
|                              | 125/30                      |                    |           | 425              |
| 150                          | 150/25                      | 510                | 455       | 470              |
|                              | 170/40                      |                    |           | 520              |
| 185                          | 185/30                      | 585                | 520       | 535              |
|                              | 210/35                      |                    |           | 590              |
|                              | 210/50                      |                    |           | 610              |
|                              | 230/30                      |                    |           | 630              |
| 240                          | 240/40                      | 700                | 625       | 645              |
|                              | 265/35                      |                    |           | 680              |
| 300                          | 300/50                      | 800                | 710       | 740              |
|                              | 305/40                      |                    |           | 740              |
|                              | 340/30                      |                    |           | 790              |



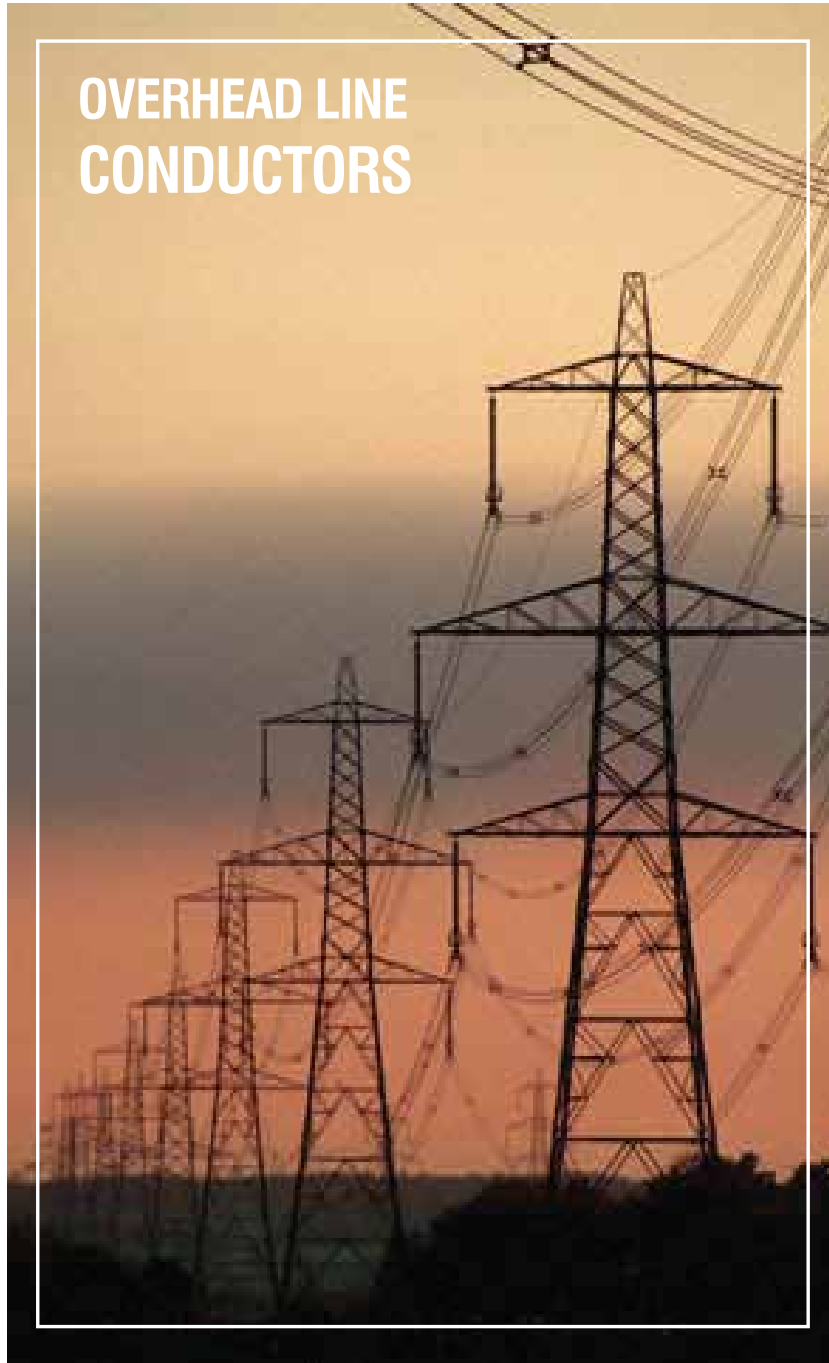
**CURRENT-CARRYING CAPACITY OF CONDUCTOR (CONT'D)**

| Nominal cross-sectional area |                             | Continuous Current |           |                  |
|------------------------------|-----------------------------|--------------------|-----------|------------------|
| Copper, Aluminium conductor  | Aluminium/ steel conductors | Copper             | Aluminium | Aluminium/ steel |
|                              | 380/50                      |                    |           | 840              |
|                              | 385/35                      |                    |           | 850              |
| 400                          |                             | 960                | 855       |                  |
|                              | 435/55                      |                    |           | 900              |
|                              | 450/40                      |                    |           | 920              |
|                              | 490/65                      |                    |           | 960              |
|                              | 495/35                      |                    |           | 985              |
| 500                          |                             | 1,110              | 960       |                  |
|                              | 510/45                      |                    |           | 995              |
|                              | 550/70                      |                    |           | 1,020            |
|                              | 560/50                      |                    |           | 1,040            |
|                              | 570/40                      |                    |           | 1,050            |
| 625                          |                             |                    |           |                  |
|                              | 650/45                      |                    | 1,140     | 1,120            |
| 800                          | 680/85                      |                    | 1,340     | 1,150            |
| 1,000                        | 1045/45                     |                    | 1,540     | 1,580            |
|                              |                             |                    |           |                  |





## OVERHEAD LINE CONDUCTORS



**WE KNOW EXACTLY WHERE WE WANT TO GO BECAUSE OUR CUSTOMERS WILL SHOW US THE WAY**  
**JERRE STEAD, CEO, AT&T**

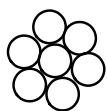




# CONDUCTORS OF OUR MANUFACTURE

## COPPER, ALUMINIUM, ALUMINIUM ALLOY OVERHEAD LINE CONDUCTORS

BS 215 PART 1, BS 215 Part 2, ASTM B231, ASTM B 232, NFC 34-120, NFC 34-125, IEC 61089, BS 7884, BS 3242, ECG E-9



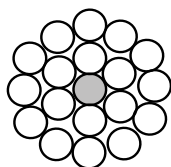
AAC/COHL  
7-wire  
circular stranded



AAC/COHL  
19-wire  
circular stranded



AAC/AAAC  
37-wire  
circular stranded

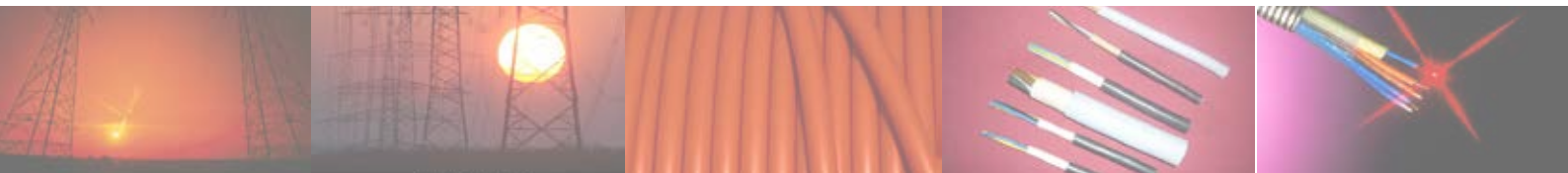


ACSR 19-wire  
18AL / 1GSW

**APPLICATION:**  
POWER DISTRIBUTION

**ALUMINIUM AND COPPER BINDING WIRES**  
BS 7884, IEC 61089  
ECG E-11 Specification

**APPLICATION:**  
BINDING OF CONDUCTORS AND INSULATORS



# CABLES OF OUR MANUFACTURE

## LOW VOLTAGE POWER CABLES

PVC INSULATED SINGLE CORE CABLES WITH HARD DRAWN COPPER / ALUMINIUM CONDUCTOR  
BS 6485, ECG E-9



LOW VOLTAGE AERIAL BUNDLED CONDUCTOR  
BS 7870-5

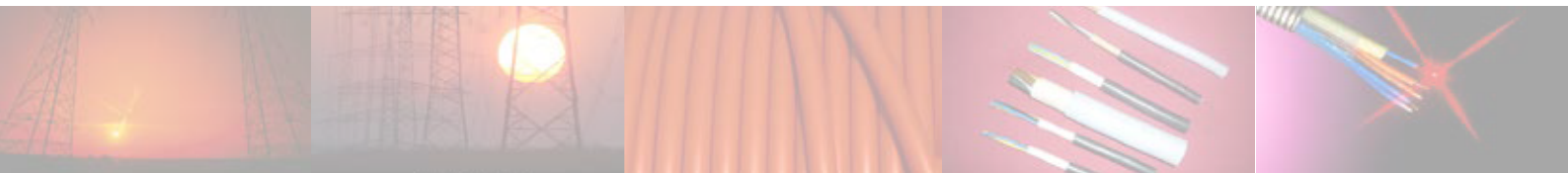


**APPLICATION:** LOW VOLTAGE POWER DISTRIBUTION

PVC INSULATED PE SHEATHED TWIN-CORE CABLE 600/1000V  
ECG E-22A / Customer Requirement



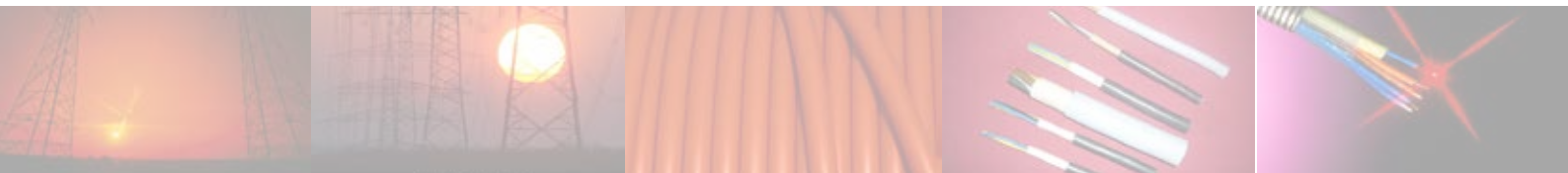
**APPLICATION:** CONSUMER SERVICE CONNECTION



**ALL ALUMINIUM CONDUCTOR (AAC)**  
BS 215 PART 1

| Nominal cross sectional area | No of wires & wire diameter | Actual area     | Overall diameter | Weight | Calculated breaking Load | Max dc. resistance @20 °C |
|------------------------------|-----------------------------|-----------------|------------------|--------|--------------------------|---------------------------|
| mm <sup>2</sup>              | mm                          | mm <sup>2</sup> | mm               | kg/km  | kN                       | Ohm/km                    |
| 22                           | 7/2.06                      | 23.33           | 6.18             | 64     | 3.99                     | 1.227                     |
| 50                           | 7/3.10                      | 52.83           | 9.3              | 145    | 8.28                     | 0.5419                    |
| 60                           | 7/3.40                      | 63.55           | 10.2             | 174    | 9.9                      | 0.4505                    |
| 100                          | 7/4.39                      | 106             | 13.71            | 290    | 16.00                    | 0.2702                    |
| 150                          | 19/3.25                     | 157.6           | 16.25            | 434    | 25.70                    | 0.1825                    |
| 200                          | 19/3.78                     | 213.2           | 18.9             | 587    | 32.40                    | 0.1349                    |
| 250                          | 19/4.22                     | 265.7           | 21.1             | 731    | 40.40                    | 0.1083                    |
| 300                          | 19/4.65                     | 322.7           | 23.25            | 888    | 48.75                    | 0.08916                   |
| 400                          | 37/3.78                     | 415.2           | 26.46            | 1145   | 63.10                    | 0.06944                   |

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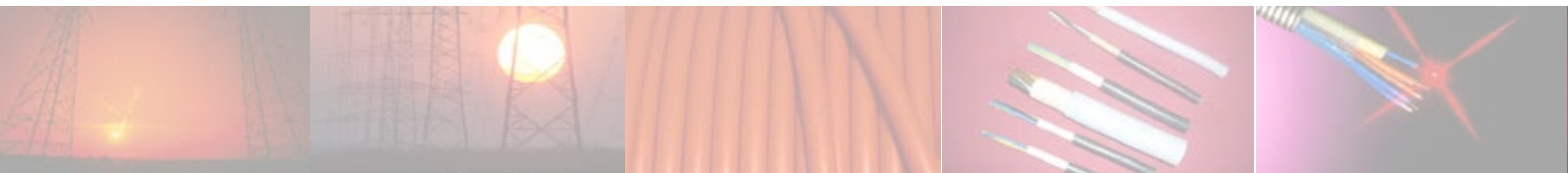
**ALL ALUMINIUM CONDUCTOR (AAC)**

IEC 61089



| Code number | Nominal cross section area | Number of Wires | Diameter |           | Weight | Rated strength | Max. d.c resistance @20°C |
|-------------|----------------------------|-----------------|----------|-----------|--------|----------------|---------------------------|
|             |                            |                 | Wire     | Conductor |        |                |                           |
|             | mm <sup>2</sup>            |                 | mm       | mm        | kg/km  | kN             | Ohm/km                    |
| 10          | 10                         | 7               | 1.35     | 4.05      | 27.40  | 1.95           | 2.8633                    |
| 16          | 16                         | 7               | 1.71     | 5.12      | 43.80  | 3.04           | 1.7896                    |
| 25          | 25                         | 7               | 2.13     | 6.40      | 68.40  | 4.50           | 1.1453                    |
| 40          | 40                         | 7               | 2.70     | 8.09      | 109.40 | 6.80           | 0.7158                    |
| 63          | 63                         | 7               | 3.39     | 10.20     | 172.30 | 10.39          | 0.4545                    |
| 100         | 100                        | 19              | 2.59     | 12.90     | 274.80 | 17.00          | 0.2377                    |
| 125         | 125                        | 19              | 2.89     | 14.50     | 343.60 | 21.25          | 0.2302                    |
| 160         | 160                        | 19              | 3.27     | 16.40     | 439.80 | 26.40          | 0.1798                    |
| 200         | 200                        | 19              | 3.66     | 18.30     | 549.70 | 32.00          | 0.1439                    |
| 250         | 250                        | 19              | 4.09     | 20.50     | 687.10 | 40.00          | 0.1151                    |
| 315         | 315                        | 37              | 3.29     | 23.03     | 867.9  | 51.97          | 0.0916                    |
| 400         | 400                        | 37              | 3.71     | 26.00     | 1102.0 | 64.00          | 0.0721                    |
| 450         | 450                        | 37              | 3.94     | 27.50     | 1239.8 | 72.00          | 0.0641                    |
| 500         | 500                        | 37              | 4.15     | 29.00     | 1377.6 | 80.00          | 0.0577                    |
| 560         | 560                        | 37              | 4.39     | 30.70     | 1542.9 | 89.60          | 0.0515                    |
| 630         | 630                        | 61              | 3.63     | 32.60     | 1738.3 | 100.80         | 0.0458                    |

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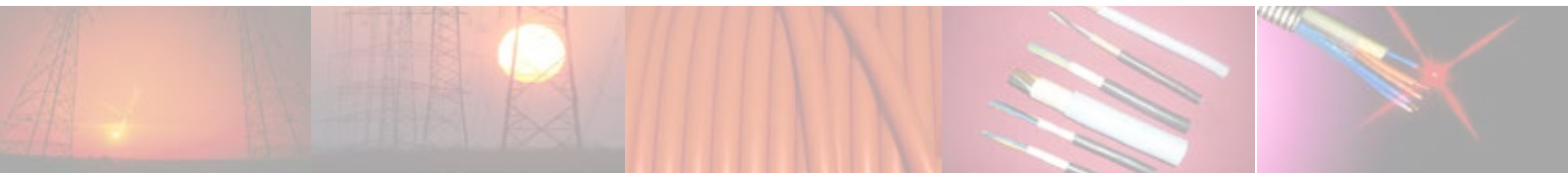
## ALL ALUMINIUM CONDUCTOR (AAC)

ASTM B 231



| Code name  | No of wires &<br>wire diameter | Actual area     | Overall<br>diameter | Weight | Calculated<br>Breaking Load |          | Max<br>d.c.resistance<br>@20°C |
|------------|--------------------------------|-----------------|---------------------|--------|-----------------------------|----------|--------------------------------|
|            |                                |                 |                     |        | Wire                        | Coductor |                                |
|            | mm                             | mm <sup>2</sup> | mm                  | kg/km  | kgf                         | kN       | Ohm/km                         |
| Peachbell  | 7/1.55                         | 13.21           | 4.65                | 36     | 254                         | 2.49     | 2.175                          |
| Rose       | 7/1.96                         | 21.12           | 5.88                | 58     | 399                         | 3.91     | 1.361                          |
| Iris       | 7/2.47                         | 33.54           | 7.41                | 92     | 611                         | 5.99     | 0.8568                         |
| Pansy      | 7/2.78                         | 42.49           | 8.34                | 117    | 746                         | 7.31     | 0.6763                         |
| Poppy      | 7/3.12                         | 53.52           | 9.36                | 148    | 903                         | 8.86     | 0.5369                         |
| Aster      | 7/3.50                         | 67.35           | 10.5                | 186    | 1136                        | 11.14    | 0.4267                         |
| Phlox      | 7/3.93                         | 84.91           | 11.79               | 234    | 1375                        | 13.48    | 0.3384                         |
| Oxlip      | 7/4.42                         | 107.4           | 13.26               | 296    | 1740                        | 17.06    | 0.2676                         |
| Sneezewort | 7/4.80                         | 126.7           | 14.4                | 349    | 2052                        | 20.12    | 0.2268                         |
| Valerian   | 19/2.91                        | 126.4           | 14.55               | 348    | 2107                        | 20.66    | 0.2273                         |
| Daisy      | 7/4.96                         | 135.3           | 14.88               | 373    | 2191                        | 21.49    | 0.2124                         |
| Laurel     | 19/3.01                        | 135.2           | 15.05               | 373    | 2254                        | 22.10    | 0.2125                         |
| Peony      | 19/3.19                        | 151.9           | 15.95               | 419    | 2482                        | 24.34    | 0.1892                         |
| Tulip      | 19/3.38                        | 170.5           | 16.9                | 470    | 2787                        | 27.33    | 0.1685                         |
| Daffodil   | 19/3.45                        | 177.6           | 17.25               | 490    | 2903                        | 28.47    | 0.1618                         |
| Canna      | 19/3.68                        | 202.1           | 18.4                | 557    | 3237                        | 31.74    | 0.1422                         |
| Goldentuft | 19/3.91                        | 228.1           | 19.55               | 629    | 3580                        | 35.11    | 0.1260                         |
| Cosmos     | 19/4.02                        | 241.2           | 20.1                | 665    | 3784                        | 37.11    | 0.1191                         |
| Zinna      | 19/4.12                        | 253.3           | 20.6                | 698    | 3975                        | 38.98    | 0.1134                         |
| Dahlia     | 19/4.35                        | 282.4           | 21.75               | 779    | 4431                        | 43.45    | 0.1018                         |

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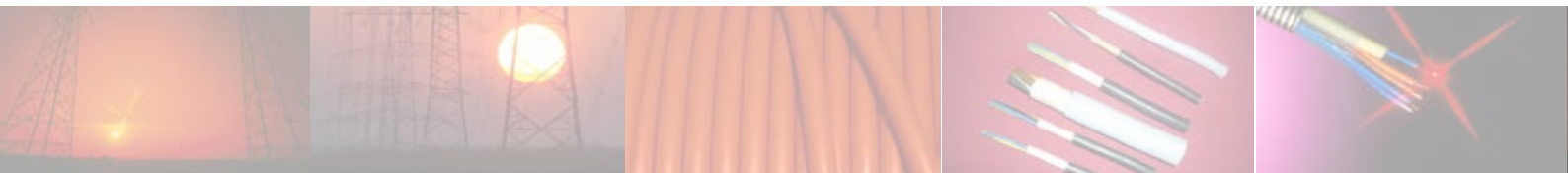
## ALUMINIUM CONDUCTOR STEEL REINFORCED (ACSR)

BS 215 PART 2



| Nominal cross sectional area | No of wires & wire diameter |        | Sectional Area of aluminium | Total sectional area | Overall diameter | Total Weight | Calculated breaking Load | Max. d.c. resistance @20 °C |
|------------------------------|-----------------------------|--------|-----------------------------|----------------------|------------------|--------------|--------------------------|-----------------------------|
|                              | Aluminium                   | Steel  |                             |                      |                  |              |                          |                             |
| mm <sup>2</sup>              | mm                          | mm     | mm <sup>2</sup>             | mm <sup>2</sup>      | mm               | kg/km        | kN                       | Ohm/km                      |
| 25                           | 6/2.36                      | 1/2.36 | 26.25                       | 30.62                | 7.08             | 106          | 9.61                     | 1.093                       |
| 30                           | 6/2.59                      | 1/2.59 | 31.61                       | 36.88                | 7.77             | 128          | 11.45                    | 0.9077                      |
| 40                           | 6/3.00                      | 1/3.00 | 42.41                       | 49.48                | 9                | 172          | 15.2                     | 0.6766                      |
| 50                           | 6/3.35                      | 1/3.35 | 52.88                       | 61.7                 | 10.05            | 214          | 18.35                    | 0.5426                      |
| 70                           | 12/2.79                     | 7/2.79 | 73.37                       | 116.2                | 13.95            | 538          | 61.2                     | 0.3936                      |
| 100                          | 6/4.72                      | 7/1.57 | 105                         | 118.6                | 14.15            | 394          | 32.7                     | 0.2733                      |
| 150                          | 30/2.59                     | 7/2.59 | 158.1                       | 194.9                | 18.13            | 726          | 69.2                     | 0.1828                      |
| 150                          | 18/3.35                     | 1/3.35 | 158.7                       | 167.5                | 16.75            | 506          | 35.7                     | 0.1815                      |
| 175                          | 30/2.79                     | 7/2.79 | 183.4                       | 226.2                | 19.53            | 842          | 79.8                     | 0.1576                      |
| 175                          | 18/3.61                     | 1/3.61 | 184.3                       | 194.5                | 18.05            | 587          | 41.1                     | 0.1563                      |
| 200                          | 30/3.00                     | 7/3.00 | 212.1                       | 261.5                | 21               | 974          | 95.25                    | 0.1363                      |
| 200                          | 18/3.86                     | 1/3.86 | 210.6                       | 222.3                | 19.30            | 671          | 46.55                    | 0.1367                      |
| 400                          | 54/3.18                     | 7/3.18 | 428.9                       | 484.5                | 28.62            | 1621         | 131.9                    | 0.0674                      |

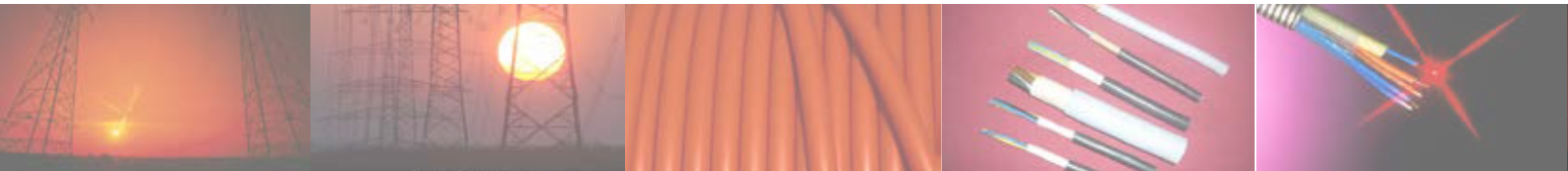
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**ALUMINIUM CONDUCTOR STEEL REINFORCED**

ASTM B 232

| Code Name | No. of wires & wire diameter |         | Actual Area     |                 |                 | Overall Diameter | Mass   |           | Rated Strength | Max. d.c. resistance @20°C |
|-----------|------------------------------|---------|-----------------|-----------------|-----------------|------------------|--------|-----------|----------------|----------------------------|
|           | Aluminium                    | Steel   | Aluminium       | Steel           | Total           |                  | kg/km  | Ib/1000ft |                |                            |
|           | mm                           | mm      | mm <sup>2</sup> | mm <sup>2</sup> | mm <sup>2</sup> |                  |        |           | kN             | Ohm / km                   |
| Turkey    | 6/1.68                       | 1/1.68  | 13.3            | 2.22            | 15.52           | 5.03             | 53.6   | 36.02     | 5.29           | 2.1521                     |
| ...       | 6/1.89                       | 1/1.89  | 16.84           | 2.81            | 19.65           | 5.66             | 67.7   | 45.51     | 6.65           | 1.6997                     |
| Swan      | 6/2.12                       | 1/2.12  | 21.18           | 3.53            | 24.71           | 6.35             | 85.3   | 57.35     | 8.3            | 1.3514                     |
| Swanate   | 7/1.96                       | 1/2.61  | 21.12           | 5.35            | 26.47           | 6.53             | 99.6   | 66.95     | 10.5           | 1.3553                     |
| Sparrow   | 6/2.67                       | 1/2.67  | 33.6            | 5.6             | 39.2            | 8.03             | 135.7  | 91.2      | 12.68          | 0.8519                     |
| Sparate   | 7/2.47                       | 1/3.30  | 33.55           | 8.55            | 42.1            | 8.26             | 158.7  | 106.63    | 16.18          | 0.8531                     |
| Grouse    | 8/2.54                       | 1/4.24  | 40.54           | 14.12           | 54.66           | 9.32             | 221.4  | 148.8     | 23.13          | 0.7095                     |
| Robin     | 6/3.00                       | 1/3.0   | 42.42           | 7.07            | 49.49           | 8.99             | 171.1  | 115.0     | 15.79          | 0.6748                     |
| Petrel    | 12/2.34                      | 7/2.34  | 51.61           | 30.11           | 81.72           | 11.71            | 377.7  | 253.8     | 46.26          | 0.5601                     |
| Raven     | 6/3.37                       | 1/3.37  | 53.53           | 8.92            | 62.45           | 10.11            | 216.1  | 145.2     | 19.49          | 0.5347                     |
| Minorca   | 12/2.44                      | 7/2.44  | 56.12           | 32.74           | 88.86           | 12.22            | 411.1  | 276.3     | 50.26          | 0.5151                     |
| Quail     | 6/3.78                       | 1/3.78  | 67.34           | 11.22           | 78.56           | 11.35            | 272.0  | 182.8     | 23.58          | 0.4251                     |
| Leghorn   | 12/2.69                      | 7/2.69  | 68.21           | 39.79           | 108             | 13.46            | 499.2  | 335.5     | 60.5           | 0.4238                     |
| Guinea    | 12/2.92                      | 7/2.92  | 80.37           | 46.88           | 127.25          | 14.63            | 589.7  | 396.3     | 71.17          | 0.3596                     |
| Pigeon    | 6/4.25                       | 1/4.25  | 85.13           | 14.19           | 99.32           | 12.75            | 343.0  | 230.5     | 29.48          | 0.3362                     |
| Dotterel  | 12/3.08                      | 7/3.08  | 89.42           | 52.16           | 141.58          | 15.42            | 656.1  | 440.9     | 76.95          | 0.3232                     |
| Dorking   | 12/3.20                      | 7/3.20  | 96.52           | 56.3            | 152.82          | 16.03            | 707.8  | 475.7     | 83.18          | 0.2995                     |
| Brahma    | 16/2.86                      | 19/2.48 | 102.8           | 91.79           | 194.59          | 18.14            | 1003.8 | 674.6     | 126.2          | 0.2812                     |
| Cochin    | 12/3.37                      | 7/3.37  | 107.05          | 62.45           | 169.5           | 16.87            | 783.9  | 526.8     | 92.09          | 0.2700                     |
| Penguin   | 6/4.77                       | 1/4.77  | 107.23          | 17.87           | 125.1           | 14.3             | 432.7  | 290.8     | 37.14          | 0.2669                     |
| Waxwing   | 18/3.09                      | 1/3.09  | 135             | 7.5             | 142.5           | 15.47            | 430.2  | 289.1     | 30.58          | 0.2131                     |
| Partridge | 26/2.57                      | 7/2.0   | 134.89          | 21.99           | 156.88          | 16.31            | 546.0  | 366.9     | 50.26          | 0.2143                     |
| Ostrich   | 26/2.73                      | 7/2.12  | 152.21          | 24.71           | 176.92          | 17.27            | 613.4  | 412.2     | 56.45          | 0.1899                     |
| Merlin    | 18/3.47                      | 1/3.47  | 170.25          | 9.46            | 179.71          | 17.37            | 542.8  | 364.8     | 30.6           | 0.1690                     |
| Linnet    | 26/2.89                      | 7/2.25  | 170.57          | 27.84           | 198.41          | 18.29            | 687.5  | 462.0     | 62.72          | 0.1695                     |
| Oriole    | 30/2.69                      | 7/2.69  | 170.52          | 39.79           | 210.31          | 18.82            | 783.3  | 526.4     | 76.95          | 0.1699                     |
| Chickadee | 18/3.77                      | 1/3.77  | 200.96          | 11.16           | 212.12          | 18.87            | 641.3  | 431.0     | 44.22          | 0.1431                     |
| Brant     | 24/3.27                      | 7/2.18  | 201.58          | 26.13           | 227.71          | 19.61            | 761.0  | 511.4     | 64.94          | 0.1434                     |
| Ibis      | 26/3.14                      | 7/2.44  | 201.36          | 32.74           | 234.1           | 19.89            | 812.5  | 546.0     | 72.51          | 0.1435                     |
| Lark      | 30/2.92                      | 7/2.92  | 200.92          | 46.88           | 247.8           | 20.47            | 925.2  | 621.8     | 90.3           | 0.1442                     |
| Pelican   | 18/4.14                      | 1/4.14  | 242.34          | 13.46           | 255.8           | 20.68            | 769.7  | 517.3     | 52.49          | 0.1187                     |
| Flicker   | 24/3.58                      | 7/2.39  | 241.61          | 31.41           | 273.02          | 21.49            | 913.5  | 613.9     | 76.51          | 0.1196                     |
| Hawk      | 26/3.44                      | 7/2.67  | 241.68          | 39.2            | 280.88          | 21.79            | 975.1  | 655.3     | 86.73          | 0.1196                     |
| Hen       | 30/3.20                      | 7/3.20  | 241.31          | 56.3            | 297.61          | 22.43            | 1110.6 | 746.4     | 105.87         | 0.1201                     |
| Osprey    | 18/4.47                      | 1/4.47  | 282.51          | 15.69           | 298.2           | 22.33            | 897.7  | 603.3     | 60.94          | 0.1018                     |
| Parakeet  | 24/3.87                      | 7/2.58  | 282.34          | 36.6            | 318.94          | 23.22            | 1065.6 | 716.1     | 76.51          | 0.1024                     |
| Dove      | 26/3.72                      | 7/2.89  | 282.62          | 45.92           | 328.54          | 23.55            | 1138.6 | 765.2     | 100.53         | 0.1023                     |
| Eagle     | 30/3.46                      | 7/3.46  | 282.11          | 65.83           | 347.94          | 24.2             | 1295.6 | 870.7     | 123.63         | 0.1027                     |





## ALUMINIUM CONDUCTOR STEEL REINFORCED

ASTM B 232 (CONT'D)

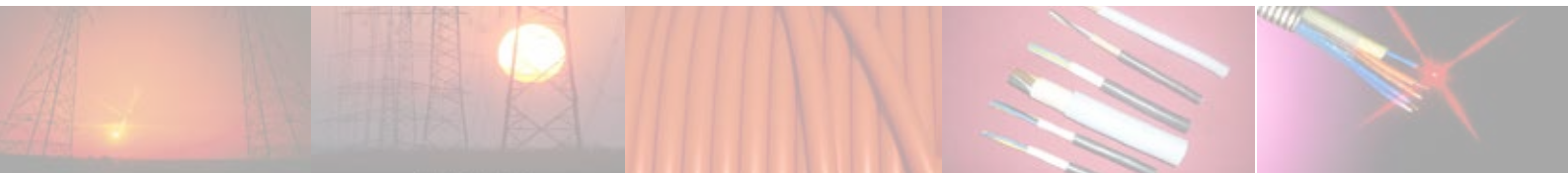
| Code Name | No. of wires & wire diameter |         | Actual Area     |                 |                 | Overall Diameter | Mass    |           | Rated Strength | Max. d.c. resistance @20°C |
|-----------|------------------------------|---------|-----------------|-----------------|-----------------|------------------|---------|-----------|----------------|----------------------------|
|           | Aluminium                    | Steel   | Aluminium       | Steel           | Total           |                  | kg/km   | lb/1000ft |                |                            |
|           | mm                           | mm      | mm <sup>2</sup> | mm <sup>2</sup> | mm <sup>2</sup> | mm               |         |           | kN             | Ohm / km                   |
| Peacock   | 24/4.03                      | 7/2.69  | 306.17          | 39.79           | 345.96          | 24.21            | 1,158.9 | 778.8     | 96.08          | 0.0944                     |
| Squab     | 26/3.87                      | 7/3.01  | 305.87          | 49.82           | 355.69          | 24.54            | 1,237.0 | 831.3     | 108.06         | 0.0945                     |
| Wood Duck | 30/3.61                      | 7/3.61  | 307.1           | 71.66           | 378.76          | 25.25            | 1,408.4 | 946.5     | 128.55         | 0.0944                     |
| Teal      | 30/3.61                      | 19/2.16 | 307.1           | 69.63           | 376.73          | 25.25            | 1,396.6 | 938.6     | 133.45         | 0.0944                     |
| Kingbird  | 18/4.78                      | 1/4.78  | 323.05          | 17.95           | 341             | 23.89            | 1,026.6 | 689.9     | 69.84          | 0.0890                     |
| Swift     | 36/3.38                      | 1/3.38  | 323.06          | 8.97            | 332.03          | 23.62            | 956.5   | 642.8     | 61.39          | 0.0890                     |
| Rook      | 24/4.14                      | 7/2.76  | 323.12          | 41.89           | 365.01          | 24.82            | 1,217.5 | 818.2     | 101            | 0.0895                     |
| Grosbeak  | 26/3.97                      | 7/3.09  | 321.88          | 52.5            | 374.38          | 25.15            | 1,300.8 | 874.2     | 112.07         | 0.0898                     |
| Scoter    | 30/3.70                      | 7/3.70  | 322.6           | 75.27           | 397.87          | 25.88            | 1,480.7 | 995.1     | 135.23         | 0.0898                     |
| Egret     | 30/3.70                      | 19/2.22 | 322.6           | 73.55           | 396.15          | 25.88            | 1,469.0 | 987.2     | 140.12         | 0.0898                     |
| Flamingo  | 24/4.23                      | 7/2.82  | 337.32          | 43.73           | 381.05          | 25.4             | 1,276.6 | 857.9     | 105.42         | 0.0857                     |
| Gannet    | 26/4.07                      | 7/3.16  | 338.3           | 54.91           | 393.21          | 25.76            | 1,363.3 | 916.2     | 161.92         | 0.0854                     |
| Stilt     | 24/4.39                      | 7/2.92  | 363.32          | 46.88           | 410.2           | 26.31            | 1,370.5 | 921.0     | 113.43         | 0.0796                     |
| Starling  | 26/4.21                      | 7/3.28  | 361.98          | 59.16           | 421.14          | 26.7             | 1,463.8 | 983.7     | 126.33         | 0.0799                     |
| Redwing   | 30/3.92                      | 19/2.35 | 362.11          | 82.42           | 444.53          | 27.46            | 1,650.6 | 1,109.3   | 153.91         | 0.0800                     |
| Coot      | 36/3.77                      | 1/3.77  | 401.91          | 11.16           | 413.07          | 26.42            | 1,195.8 | 803.6     | 74.73          | 0.0716                     |
| Cuckoo    | 24/4.62                      | 7/3.08  | 402.38          | 52.16           | 454.54          | 27.74            | 1,522.2 | 1,023.0   | 124.11         | 0.0718                     |
| Drake     | 26/4.44                      | 7/3.45  | 402.61          | 65.45           | 468.06          | 28.14            | 1,326.4 | 891.4     | 140.12         | 0.0718                     |
| Tern      | 45/3.38                      | 7/2.25  | 403.82          | 27.54           | 431.36          | 27               | 1,331.8 | 895.0     | 98.33          | 0.0716                     |
| Condor    | 54/3.08                      | 7/3.08  | 402.38          | 52.16           | 454.54          | 27.74            | 1,520.7 | 1,022.0   | 125.44         | 0.0718                     |
| Mallard   | 30/4.14                      | 19/2.48 | 403.89          | 91.79           | 495.68          | 28.96            | 1,836.0 | 1,233.9   | 137.74         | 0.0717                     |
| Ruddy     | 45/3.59                      | 7/2.40  | 455.56          | 31.67           | 487.23          | 28.73            | 1,507.3 | 1,013.0   | 108.79         | 0.0634                     |
| Canary    | 54/3.28                      | 7/3.28  | 456.34          | 59.15           | 515.49          | 29.52            | 1,723.1 | 1,158.0   | 141.9          | 0.0633                     |
| Catbird   | 36/4.14                      | 1/4.14  | 484.67          | 13.46           | 498.13          | 28.96            | 1,434.4 | 964.0     | 88.07          | 0.0593                     |
| Rail      | 45/3.70                      | 7/2.47  | 483.91          | 33.55           | 517.46          | 29.29            | 1,598.1 | 1,074.0   | 115.29         | 0.0597                     |
| Cardinal  | 54/3.38                      | 7/3.38  | 484.59          | 62.82           | 547.41          | 30.38            | 1,825.9 | 1,227.1   | 150.35         | 0.0596                     |
| Tanager   | 36/4.30                      | 1/4.30  | 522.86          | 14.52           | 537.38          | 30.12            | 1,553.5 | 1,044.0   | 95.19          | 0.0550                     |
| Ortolan   | 45/3.85                      | 7/2.57  | 523.94          | 36.32           | 560.26          | 30.78            | 1,730.5 | 1,163.0   | 123.33         | 0.0552                     |
| Scurlew   | 54/3.51                      | 7/3.51  | 522.58          | 67.74           | 590.32          | 31.62            | 1,977.6 | 1,329.0   | 162.65         | 0.0553                     |
| Bluejay   | 45/4.00                      | 7/2.66  | 565.56          | 38.91           | 604.47          | 31.98            | 1,866.0 | 1,254.0   | 132.78         | 0.0511                     |
| Finch     | 54/3.65                      | 19/2.19 | 565.1           | 71.58           | 636.68          | 32.84            | 2,127.8 | 1,430.0   | 174.05         | 0.0514                     |
| Bunting   | 45/4.14                      | 7/2.76  | 605.84          | 41.89           | 647.73          | 33.07            | 1,996.9 | 1,342.0   | 142.5          | 0.0477                     |
| Grackle   | 54/3.77                      | 19/2.27 | 602.87          | 76.9            | 679.77          | 33.99            | 2,278.1 | 1,531.0   | 186.34         | 0.0482                     |
| Skylark   | 36/4.77                      | 1/4.77  | 643.41          | 17.87           | 661.28          | 33.43            | 1,913.6 | 1,286.0   | 117.46         | 0.0447                     |
| Bittern   | 45/4.27                      | 7/2.85  | 644.49          | 44.66           | 689.15          | 34.16            | 2,130.8 | 1,432.0   | 151.72         | 0.0448                     |
| Pheasant  | 54/3.90                      | 19/2.34 | 645.16          | 81.72           | 726.88          | 35.1             | 2,431.4 | 1,634.0   | 194.06         | 0.0450                     |
| Dipper    | 45/4.40                      | 7/2.93  | 684.33          | 47.2            | 731.53          | 35.2             | 2,263.3 | 1,521.0   | 160.63         | 0.0422                     |
| Martin    | 54/4.02                      | 19/2.41 | 685.48          | 86.68           | 772.16          | 36.17            | 2,581.7 | 1,735.0   | 205.95         | 0.0424                     |
| Bobolink  | 45/4.53                      | 7/3.02  | 725.36          | 50.15           | 775.51          | 36.25            | 2,397.2 | 1,611.0   | 170.37         | 0.0398                     |
| Plover    | 54/4.14                      | 19/2.48 | 727.01          | 91.79           | 818.8           | 37.21            | 2,734.9 | 1,838.0   | 218.41         | 0.0400                     |
| Nuthatch  | 45/4.65                      | 7/3.10  | 764.3           | 52.84           | 817.14          | 37.23            | 2,529.6 | 1,700.0   | 178.37         | 0.0378                     |
| Parrot    | 54/4.25                      | 19/2.55 | 766.16          | 97.05           | 863.21          | 38.23            | 2,883.7 | 1,938.0   | 229.97         | 0.0379                     |
| Lapwing   | 45/4.78                      | 7/3.18  | 807.63          | 55.6            | 863.23          | 38.2             | 2,663.5 | 1,790.0   | 187.71         | 0.0358                     |
| Falcon    | 54/4.36                      | 19/2.62 | 806.33          | 102.45          | 908.78          | 39.24            | 3,038.5 | 2,042.0   | 242.43         | 0.0360                     |
| Chukar    | 84/3.70                      | 19/2.22 | 903.29          | 73.55           | 976.84          | 40.69            | 3,083.1 | 2,072.0   | 226.86         | 0.0322                     |
| Bluebird  | 84/4.07                      | 19/2.44 | 1092.99         | 88.85           | 1181.84         | 44.75            | 3,731.9 | 2,508.0   | 628.23         | 0.0266                     |
| Kiwi      | 72/4.41                      | 7/2.94  | 1099.91         | 47.53           | 1147.44         | 44.07            | 3,423.9 | 2,301.0   | 221.52         | 0.0264                     |
| Thrasher  | 76/4.43                      | 19/2.07 | 1171.57         | 63.95           | 1235.52         | 45.77            | 3,754.2 | 2,523.0   | 252.21         | 0.0248                     |



**ALUMINIUM CONDUCTOR STEEL REINFORCED**

ASTM B 232M

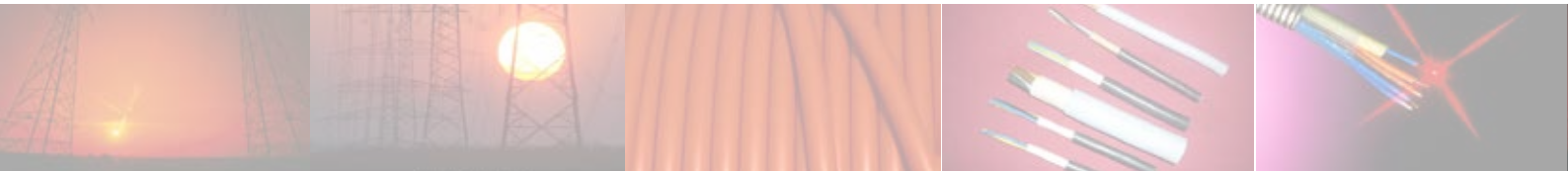
| Size,<br>mm <sup>2</sup> | No. of wires & wire<br>diameter |             | Actual Area                  |                          |                          | Overall<br>Diameter | Weight | Rated<br>Strength | Max. d.c.<br>resistance<br>@20°C |
|--------------------------|---------------------------------|-------------|------------------------------|--------------------------|--------------------------|---------------------|--------|-------------------|----------------------------------|
|                          | Aluminium<br>mm                 | Steel<br>mm | Aluminium<br>mm <sup>2</sup> | Steel<br>mm <sup>2</sup> | Total<br>mm <sup>2</sup> | mm                  | kg/km  | kN                | Ohm / km                         |
| 12.5                     | 6/1.63                          | 1/1.63      | 12.52                        | 2.09                     | 14.61                    | 4.89                | 50.61  | 5.25              | 2.2862                           |
| 16                       | 6/1.84                          | 1/1.84      | 15.96                        | 2.66                     | 18.62                    | 5.52                | 64.49  | 6.69              | 1.7934                           |
| 20                       | 6/2.06                          | 1/2.06      | 20.00                        | 3.33                     | 23.33                    | 6.18                | 80.83  | 8.29              | 1.4312                           |
| 20                       | 7/1.91                          | 1/2.55      | 20.06                        | 5.11                     | 25.17                    | 6.37                | 94.80  | 10.70             | 1.4269                           |
| 25                       | 6/2.30                          | 1/2.30      | 24.93                        | 4.16                     | 29.09                    | 6.90                | 100.80 | 10.10             | 1.1481                           |
| 25                       | 7/2.13                          | 1/2.84      | 24.95                        | 6.34                     | 31.29                    | 7.10                | 117.80 | 13.10             | 1.1472                           |
| 31.5                     | 6/2.59                          | 1/2.59      | 31.62                        | 5.27                     | 36.89                    | 7.77                | 127.80 | 12.60             | 0.9052                           |
| 31.5                     | 7/2.39                          | 1/3.19      | 31.41                        | 7.99                     | 39.40                    | 7.97                | 148.40 | 16.20             | 0.9113                           |
| 40                       | 6/2.91                          | 1/2.91      | 39.91                        | 6.65                     | 46.56                    | 8.73                | 161.30 | 15.70             | 0.7172                           |
| 40                       | 8/2.52                          | 1/4.20      | 39.91                        | 13.86                    | 53.77                    | 9.24                | 217.9  | 24.70             | 0.7207                           |
| 50                       | 6/3.26                          | 1/3.26      | 50.09                        | 8.35                     | 58.44                    | 9.78                | 202.40 | 19.20             | 0.5714                           |
| 50                       | 12/2.30                         | 7/2.30      | 49.86                        | 29.09                    | 78.95                    | 11.50               | 365.40 | 48.20             | 0.5797                           |
| 56                       | 12/2.44                         | 7/2.44      | 56.12                        | 32.74                    | 88.86                    | 12.20               | 411.20 | 54.30             | 0.5151                           |
| 63                       | 6/3.66                          | 1/3.66      | 63.13                        | 10.52                    | 73.65                    | 10.98               | 255.20 | 23.80             | 0.4534                           |
| 63                       | 12/2.59                         | 7/2.59      | 63.23                        | 36.88                    | 100.11                   | 12.95               | 463.40 | 60.80             | 0.4571                           |
| 71                       | 12/2.74                         | 7/2.74      | 70.77                        | 41.28                    | 112.05                   | 13.70               | 518.60 | 68.10             | 0.4084                           |
| 80                       | 6/4.12                          | 1/4.12      | 80.00                        | 13.33                    | 93.33                    | 12.36               | 323.30 | 29.80             | 0.3578                           |
| 80                       | 12/2.91                         | 7/2.91      | 160.00                       | 93.33                    | 253.33                   | 14.55               | 584.90 | 76.40             | 0.1807                           |
| 90                       | 12/3.09                         | 7/3.09      | 90.00                        | 52.50                    | 142.50                   | 15.45               | 659.50 | 84.20             | 0.3212                           |
| 100                      | 6/4.61                          | 1/4.61      | 100.16                       | 16.69                    | 116.85                   | 13.83               | 404.80 | 37.30             | 0.2858                           |
| 100                      | 12/3.26                         | 7/3.26      | 100.18                       | 58.44                    | 158.62                   | 16.30               | 734.10 | 93.80             | 0.2885                           |
| 100                      | 16/2.82                         | 19/2.44     | 201.30                       | 32.73                    | 234.03                   | 17.84               | 972.40 | 133               | 0.1436                           |
| 125                      | 18/2.97                         | 1/2.97      | 124.72                       | 6.93                     | 131.65                   | 14.85               | 401.30 | 29.70             | 0.2306                           |
| 125                      | 24/2.58                         | 7/1.72      | 125.49                       | 16.26                    | 141.75                   | 15.48               | 474.90 | 43.60             | 0.2303                           |
| 125                      | 26/2.47                         | 7/1.92      | 124.60                       | 20.26                    | 144.86                   | 15.64               | 503.70 | 49.60             | 0.2320                           |
| 140                      | 18/3.15                         | 1/3.15      | 140.29                       | 7.79                     | 148.08                   | 15.75               | 451.50 | 32.50             | 0.2050                           |
| 140                      | 24/2.73                         | 7/1.82      | 140.50                       | 18.21                    | 158.71                   | 16.38               | 531.80 | 48.90             | 0.2057                           |
| 140                      | 26/2.62                         | 7/2.04      | 140.19                       | 22.88                    | 163.07                   | 16.60               | 567.40 | 58.20             | 0.2062                           |
| 160                      | 18/3.36                         | 1/3.36      | 159.62                       | 8.87                     | 168.49                   | 16.80               | 513.70 | 38.10             | 0.1802                           |
| 160                      | 24/2.91                         | 7/1.94      | 159.64                       | 20.69                    | 180.33                   | 17.46               | 604.20 | 57.40             | 0.1811                           |

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**ALUMINIUM CONDUCTOR STEEL REINFORCED**

ASTM B 232M (CONT'D)

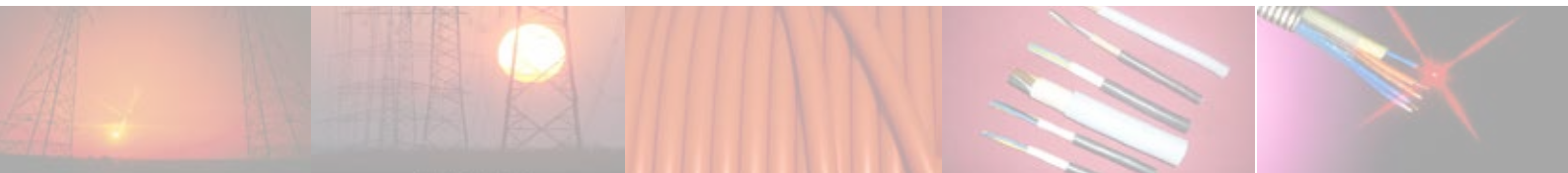
| Size,<br>mm <sup>2</sup> | No. of wires & wire<br>diameter |             | Actual Area                  |                          |                          | Overall<br>Diameter | Weight | Rated<br>Strength | Max. d.c.<br>resistance<br>@20°C |
|--------------------------|---------------------------------|-------------|------------------------------|--------------------------|--------------------------|---------------------|--------|-------------------|----------------------------------|
|                          | Aluminium<br>mm                 | Steel<br>mm | Aluminium<br>mm <sup>2</sup> | Steel<br>mm <sup>2</sup> | Total<br>mm <sup>2</sup> | mm                  | kg/km  | kN                | Ohm / km                         |
| 160                      | 26/2.80                         | 7/2.18      | 160.12                       | 26.13                    | 186.25                   | 17.74               | 648    | 62.4              | 0.1805                           |
| 160                      | 30/2.61                         | 7/2.61      | 160.53                       | 37.46                    | 197.99                   | 18.27               | 739    | 77.6              | 0.1805                           |
| 180                      | 18/3.57                         | 1/3.57      | 180.2                        | 10.01                    | 190.21                   | 17.85               | 580    | 41.4              | 0.1596                           |
| 180                      | 24/3.09                         | 7/2.06      | 180                          | 23.33                    | 203.33                   | 18.54               | 681    | 60.9              | 0.1606                           |
| 180                      | 26/2.97                         | 7/2.31      | 180.15                       | 29.34                    | 209.49                   | 18.81               | 729    | 69                | 0.1604                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 180                      | 30/2.76                         | 7/2.76      | 179.51                       | 41.89                    | 221.4                    | 19.32               | 826    | 85.9              | 0.1602                           |
| 200                      | 18/3.76                         | 1/3.76      | 199.89                       | 11.11                    | 211                      | 18.8                | 643    | 45                | 0.1439                           |
| 200                      | 24/3.26                         | 7/2.17      | 200.35                       | 25.89                    | 226.24                   | 19.55               | 758    | 67.7              | 0.1443                           |
| 200                      | 26/3.13                         | 7/2.43      | 200.08                       | 32.47                    | 232.55                   | 19.81               | 808    | 75.6              | 0.1445                           |
| 200                      | 30/2.91                         | 7/2.91      | 199.55                       | 46.56                    | 246.11                   | 20.37               | 918    | 95.5              | 0.1441                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 224                      | 18/3.98                         | 1/3.98      | 223.97                       | 12.44                    | 236.41                   | 19.9                | 721    | 50.4              | 0.1284                           |
| 224                      | 24/3.45                         | 7/2.30      | 224.39                       | 29.09                    | 253.48                   | 20.7                | 849    | 74.8              | 0.1288                           |
| 224                      | 26/3.31                         | 7/2.57      | 108.98                       | 36.32                    | 145.3                    | 20.95               | 904    | 84.5              | 0.2652                           |
| 224                      | 30/3.08                         | 7/3.08      | 223.55                       | 52.16                    | 275.71                   | 21.56               | 1,029  | 104               | 0.1287                           |
| 250                      | 18/4.21                         | 1/4.21      | 250.6                        | 13.92                    | 264.52                   | 21.05               | 806    | 56.4              | 0.1148                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 250                      | 24/3.64                         | 7/2.43      | 249.78                       | 32.47                    | 282.25                   | 21.85               | 946    | 83.4              | 0.1157                           |
| 250                      | 26/3.50                         | 7/2.72      | 250.18                       | 40.68                    | 290.86                   | 22.16               | 1,011  | 94.6              | 0.1155                           |
| 250                      | 30/3.26                         | 7/3.26      | 250.44                       | 58.44                    | 308.88                   | 22.82               | 1,152  | 117               | 0.1149                           |
| 280                      | 18/4.45                         | 1/4.45      | 279.99                       | 15.55                    | 295.54                   | 22.25               | 801    | 63                | 0.1027                           |
| 280                      | 24/3.85                         | 7/2.57      | 279.43                       | 36.31                    | 315.74                   | 23.11               | 1,058  | 92                | 0.1034                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 280                      | 26/3.70                         | 7/2.88      | 279.59                       | 45.6                     | 325.19                   | 23.44               | 1,131  | 106               | 0.1034                           |
| 280                      | 30/3.45                         | 7/3.45      | 280.48                       | 65.45                    | 345.93                   | 24.15               | 1,291  | 131               | 0.1026                           |
| 315                      | 18/4.72                         | 1/4.72      | 314.99                       | 17.5                     | 332.49                   | 23.6                | 1,014  | 70.8              | 0.0913                           |
| 315                      | 24/4.09                         | 7/2.73      | 315.36                       | 40.98                    | 356.34                   | 24.55               | 1,194  | 104               | 0.0917                           |
| 315                      | 26/3.93                         | 7/3.06      | 315.43                       | 51.48                    | 366.91                   | 24.9                | 1,277  | 117               | 0.0916                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 315                      | 30/3.66                         | 19/2.2      | 266.04                       | 72.23                    | 338.27                   | 25.64               | 1,443  | 147               | 0.1089                           |
| 355                      | 24/4.34                         | 7/2.89      | 355.09                       | 45.92                    | 401.01                   | 26.03               | 1,343  | 117               | 0.0814                           |
| 355                      | 26/4.17                         | 7/3.24      | 355.13                       | 57.72                    | 412.85                   | 26.4                | 1,435  | 131               | 0.0814                           |
| 355                      | 30/3.88                         | 19/2.33     | 354.76                       | 81.02                    | 435.78                   | 27.17               | 1,620  | 161               | 0.0817                           |
| 400                      | 24/4.61                         | 7/3.07      | 400.64                       | 51.82                    | 452.46                   | 27.65               | 1,515  | 130               | 0.0721                           |
|                          |                                 |             |                              |                          |                          |                     |        |                   |                                  |
| 400                      | 26/4.43                         | 7/3.45      | 400.8                        | 65.45                    | 466.25                   | 28.07               | 1,622  | 148               | 0.0721                           |
| 400                      | 30/4.12                         | 19/2.47     | 400                          | 91.05                    | 491.05                   | 28.83               | 1,824  | 181               | 0.0724                           |

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**ALUMINIUM CONDUCTOR STEEL REINFORCED**

ASTM B 232M (CONT'D)

| Size,<br>mm <sup>2</sup> | No. of wires & wire<br>diameter |         | Actual Area     |                 |                 | Overall<br>Diameter | Weight | Rated<br>Strength | Max. d.c.<br>resistance<br>@20°C |
|--------------------------|---------------------------------|---------|-----------------|-----------------|-----------------|---------------------|--------|-------------------|----------------------------------|
|                          | Aluminium                       | Steel   | Aluminium       | Steel           | Total           | mm                  | kg/km  | kN                | Ohm / km                         |
|                          | mm                              | mm      | mm <sup>2</sup> | mm <sup>2</sup> | mm <sup>2</sup> |                     |        |                   |                                  |
| 450                      | 45/3.57                         | 7/2.38  | 450.5           | 31.15           | 481.65          | 28.56               | 1,492  | 112               | 0.0642                           |
| 450                      | 54/3.26                         | 7/3.26  | 450.79          | 58.44           | 509.23          | 29.34               | 1,706  | 147               | 0.0641                           |
| 500                      | 45/3.76                         | 7/2.51  | 499.73          | 34.64           | 534.37          | 30.09               | 1,656  | 122               | 0.0578                           |
| 500                      | 54/3.43                         | 7/3.43  | 499.03          | 64.69           | 563.72          | 30.87               | 1,889  | 163               | 0.0579                           |
| 560                      | 45/3.98                         | 7/2.65  | 559.91          | 248.23          | 808.14          | 31.83               | 1,854  | 136               | 0.0516                           |
|                          |                                 |         |                 |                 |                 |                     |        |                   |                                  |
| 560                      | 54/3.63                         | 19/2.18 | 558.92          | 70.93           | 629.85          | 32.68               | 2,112  | 182               | 0.0520                           |
| 630                      | 45/4.22                         | 7/2.81  | 629.48          | 43.42           | 672.9           | 33.75               | 2,084  | 153               | 0.0459                           |
| 630                      | 54/3.85                         | 19/2.31 | 628.73          | 79.64           | 708.37          | 34.65               | 2,375  | 199               | 0.0462                           |
| 710                      | 45/4.48                         | 7/2.99  | 709.44          | 49.16           | 758.6           | 35.85               | 2,351  | 173               | 0.0407                           |
| 710                      | 54/4.09                         | 19/2.45 | 709.56          | 89.58           | 799.14          | 36.79               | 2,678  | 224               | 0.0409                           |
|                          |                                 |         |                 |                 |                 |                     |        |                   |                                  |
| 800                      | 45/4.76                         | 7/3.17  | 800.89          | 55.25           | 856.14          | 38.07               | 2,652  | 193               | 0.0361                           |
| 800                      | 54/4.34                         | 19/2.60 | 798.95          | 100.89          | 899.84          | 39.04               | 3,015  | 252               | 0.0364                           |
| 900                      | 72/3.99                         | 7/2.66  | 900.38          | 38.91           | 939.29          | 39.9                | 2,812  | 186               | 0.0323                           |
| 900                      | 84/3.69                         | 19/2.21 | 898.42          | 72.89           | 971.31          | 40.57               | 3,073  | 236               | 0.0323                           |
| 1000                     | 72/4.21                         | 7/2.81  | 1002.4          | 43.42           | 1045.82         | 42.11               | 3,132  | 208               | 0.0290                           |
|                          |                                 |         |                 |                 |                 |                     |        |                   |                                  |
| 1000                     | 84/3.89                         | 19/2.33 | 998.45          | 59.7            | 1058.15         | 42.77               | 3,416  | 254               | 0.0291                           |
| 1120                     | 72/4.45                         | 7/2.97  | 1119.95         | 48.5            | 1168.45         | 44.51               | 3,499  | 232               | 0.0259                           |
| 1120                     | 76/4.33                         | 19/2.02 | 1119.27         | 60.9            | 1180.17         | 44.51               | 3,499  | 248               | 0.0260                           |
| 1120                     | 84/4.12                         | 19/2.47 | 1120            | 91.05           | 1211.05         | 45.31               | 3,833  | 286               | 0.0259                           |
| 1250                     | 72/4.70                         | 7/2.97  | 1249.32         | 53.87           | 1303.19         | 46.99               | 3,901  | 257               | 0.0232                           |
|                          |                                 |         |                 |                 |                 |                     |        |                   |                                  |
| 1250                     | 76/4.58                         | 19/2.14 | 1252.25         | 68.35           | 1320.6          | 47.34               | 4,023  | 278               | 0.0232                           |
| 1250                     | 84/4.35                         | 19/2.61 | 1248.54         | 101.67          | 1350.21         | 47.85               | 4,274  | 319               | 0.0233                           |

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**ALUMINIUM CONDUCTOR STEEL REINFORCED (ACSR)**

IEC 61089



| Code number | Steel ratio | Cross-sectional Areas |                 | Number of Wires |             | Wire Diameter |             |       | Diameter |            | Linear Mass | Rated strength | Max d.c. resistance @20°C |
|-------------|-------------|-----------------------|-----------------|-----------------|-------------|---------------|-------------|-------|----------|------------|-------------|----------------|---------------------------|
|             |             | Alu-min-ium           | Steel           | Total           | Alu-min-ium | Steel         | Alu-min-ium | Steel | Core     | con-ductor |             |                | Ohm/km                    |
|             | %           | mm <sup>2</sup>       | mm <sup>2</sup> | mm <sup>2</sup> |             |               | mm          | mm    | mm       | mm         | kg/km       | kN             |                           |
| 16          | 17          | 16                    | 2.67            | 18.7            | 6           | 1             | 1.84        | 1.84  | 1.84     | 5.53       | 64.6        | 6.08           | 1.7934                    |
| 25          | 17          | 25                    | 4.17            | 29.2            | 6           | 1             | 2.3         | 2.3   | 2.3      | 6.91       | 100.9       | 9.13           | 1.1478                    |
| 40          | 17          | 40                    | 6.67            | 46.7            | 6           | 1             | 2.91        | 2.91  | 2.91     | 8.74       | 161.5       | 14.4           | 0.7174                    |
| 63          | 17          | 63                    | 10.5            | 73.5            | 6           | 1             | 3.66        | 3.66  | 3.66     | 11         | 254.4       | 21.63          | 0.4555                    |
| 100         | 17          | 100                   | 16.7            | 117             | 6           | 1             | 4.61        | 4.61  | 4.61     | 13.8       | 403.8       | 34.33          | 0.2869                    |
| 125         | 6           | 125                   | 6.94            | 132             | 18          | 1             | 2.97        | 2.97  | 2.97     | 14.9       | 397.9       | 29.17          | 0.2304                    |
| 125         | 16          | 125                   | 20.4            | 145             | 26          | 7             | 2.47        | 1.92  | 5.77     | 15.7       | 503.9       | 45.69          | 0.2310                    |
| 160         | 6           | 160                   | 8.89            | 169             | 18          | 1             | 3.36        | 3.36  | 3.36     | 16.8       | 509.3       | 36.18          | 0.1800                    |
| 160         | 16          | 160                   | 26.1            | 186             | 26          | 7             | 2.8         | 2.18  | 6.53     | 17.7       | 644.9       | 57.69          | 0.1805                    |
| 200         | 6           | 200                   | 11.1            | 211             | 18          | 1             | 3.76        | 3.76  | 3.76     | 18.8       | 636.7       | 44.22          | 0.1440                    |
| 200         | 16          | 200                   | 32.6            | 233             | 26          | 7             | 3.13        | 2.43  | 7.3      | 19.8       | 806.2       | 70.13          | 0.1444                    |
| 250         | 10          | 250                   | 24.6            | 275             | 22          | 7             | 3.8         | 2.11  | 6.34     | 21.6       | 880.6       | 68.72          | 0.1154                    |
| 250         | 16          | 250                   | 40.7            | 291             | 26          | 7             | 3.5         | 2.72  | 8.16     | 22.2       | 1007.7      | 87.67          | 0.1155                    |
| 315         | 7           | 315                   | 21.8            | 337             | 45          | 7             | 2.99        | 1.99  | 5.97     | 23.9       | 1039.6      | 79.03          | 0.0917                    |
| 315         | 16          | 315                   | 51.3            | 366             | 26          | 7             | 3.93        | 3.05  | 9.16     | 24.9       | 1269.7      | 106.83         | 0.0917                    |
| 400         | 7           | 400                   | 27.7            | 428             | 45          | 7             | 3.36        | 2.24  | 6.73     | 26.9       | 1320.1      | 98.36          | 0.0722                    |
| 400         | 13          | 400                   | 51.9            | 452             | 54          | 7             | 3.07        | 3.07  | 9.21     | 27.6       | 1510.3      | 123.04         | 0.0723                    |
| 450         | 7           | 450                   | 31.1            | 481             | 45          | 7             | 3.57        | 2.38  | 7.14     | 28.5       | 1485.2      | 107.47         | 0.0642                    |
| 450         | 13          | 450                   | 58.3            | 508             | 54          | 7             | 3.26        | 3.26  | 9.77     | 29.3       | 1699.1      | 138.42         | 0.0643                    |
| 500         | 7           | 450                   | 34.6            | 535             | 45          | 7             | 3.76        | 2.51  | 7.52     | 30.1       | 1650.2      | 119.41         | 0.0578                    |
| 500         | 13          | 450                   | 64.8            | 565             | 54          | 7             | 3.43        | 3.43  | 10.3     | 30.9       | 1887.9      | 153.8          | 0.0578                    |
| 560         | 7           | 560                   | 38.7            | 599             | 45          | 7             | 3.98        | 2.65  | 7.96     | 31.8       | 1848.2      | 133.74         | 0.0516                    |
| 560         | 13          | 560                   | 70.9            | 631             | 54          | 19            | 3.63        | 2.18  | 10.9     | 32.7       | 2103.4      | 172.59         | 0.0516                    |
| 630         | 7           | 630                   | 43.6            | 674             | 45          | 7             | 4.22        | 2.81  | 8.44     | 33.8       | 2079.2      | 150.45         | 0.0459                    |
| 630         | 13          | 630                   | 79.8            | 710             | 54          | 19            | 3.85        | 2.31  | 11.6     | 34.7       | 2366.3      | 191.77         | 0.0459                    |

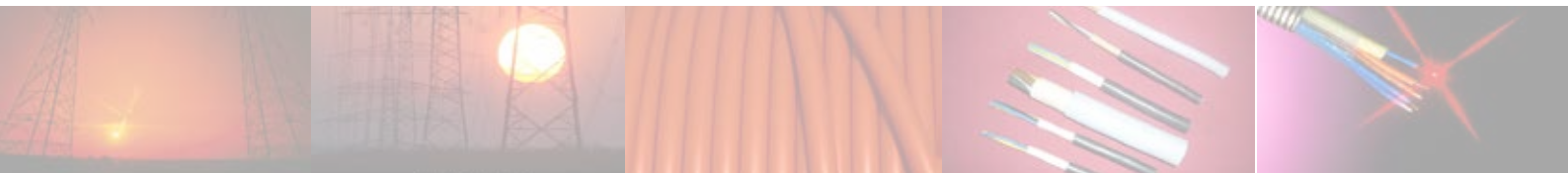


### ALUMINIUM CONDUCTOR STEEL REINFORCED (ACSR) NFC 34-120



| Nom-<br>inal cross-<br>sec-<br>tional<br>area | No of wires &<br>wire diameter |                 | Actual Area     |                 | Total Cross-<br>sec-<br>tional<br>Area | Over-<br>all diam-<br>eter | Ungreased<br>Weight |       | Total | Grease Weight<br>Calculated breaking<br>load @20C |        |       | Max,<br>d.c<br>resis-<br>tance<br>@20°C |
|---|--------------------------------|-----------------|-----------------|-----------------|--|----------------------------|---------------------|-------|-------|---|--------|-------|---|
|   | Al                             | Steel           |                 | Steel           |  |                            | Al                  | Steel |       | Steel   | layers |       |   |
|   | mm                             | mm <sup>2</sup> | mm <sup>2</sup> | mm <sup>2</sup> |  |                            | kg/km               | kg/km |       | kg/km   | kg/km  | kN    | Ohm/<br>km                              |
| 37.7  | 9/2.00                         | 3/2.00          | 28.27           | 9.42            | 37.69                                  | 8.3                        | 78                  | 77    | 155   | 0.9   | 0.9    | 15.4  | 1.02                                    |
| 59.7  | 12/2.00                        | 7/2.00          | 37.7            | 21.99           | 59.69                                  | 10                         | 104                 | 172   | 276   | 4   | 4      | 30.5  | 0.765                                   |
| 75.5  | 12/2.25                        | 7/2.25          | 47.71           | 27.83           | 75.54                                  | 11.25                      | 130                 | 218   | 348   | 5.1   | 5.1    | 38.4  | 0.605                                   |
| 116.2   | 30/2.00                        | 7/2.00          | 94.25           | 21.99           | 116.2                                  | 14                         | 260                 | 172   | 432   | 4   | 12     | 41.45 | 0.306                                   |
| 116.2   | 30/2.00                        | 7/2.00          | 94.25           | 21.99           | 116.2                                  | 14                         | 260                 | 172   | 432   | 4   | 12     | 47.4  | 0.306                                   |
| 147.1   | 30/2.25                        | 7/2.25          | 119.3           | 27.83           | 47.1                                   | 15.75                      | 329                 | 218   | 547   | 5.1   | 15     | 52    | 0.243                                   |
| 147.1   | 30/2.25                        | 7/2.25          | 119.3           | 27.83           | 47.1                                   | 15.75                      | 329                 | 218   | 547   | 5.1   | 15     | 59.5  | 0.243                                   |
| 181.6   | 30/2.50                        | 7/2.50          | 147.3           | 34.36           | 181.6                                  | 17.5                       | 406                 | 269   | 675   | 6.3   | 19     | 62.6  | 0.197                                   |
| 181.6   | 30/2.50                        | 7/2.50          | 147.3           | 34.36           | 181.6                                  | 17.5                       | 406                 | 269   | 675   | 6.3   | 19     | 72.9  | 0.197                                   |
| 228   | 30/2.80                        | 7/2.80          | 184.7           | 43.1            | 227.8                                  | 19.6                       | 510                 | 338   | 848   | 7.9   | 24     | 77.1  | 0.157                                   |
| 228   | 30/2.80                        | 7/2.80          | 184.7           | 43.1            | 227.8                                  | 19.6                       | 510                 | 338   | 848   | 7.9   | 24     | 90    | 0.157                                   |
| 297   | 36/2.80                        | 19/2.25         | 221.7           | 75.54           | 297.2                                  | 22.45                      | 620                 | 598   | 1218  | 15  | 35     | 139.5 | 0.1305                                  |
| 288   | 30/3.15                        | 7/3.15          | 233.8           | 54.55           | 288.4                                  | 22.05                      | 647                 | 427   | 1074  | 10  | 30     | 96    | 0.1225                                  |
| 288   | 30/3.15                        | 7/3.15          | 233.8           | 54.55           | 288.4                                  | 22.05                      | 647                 | 427   | 1074  | 10  | 30     | 113.2 | 0.1225                                  |
| 412   | 32/3.6                         | 19/2.4          | 325.7           | 85/95           | 411.7                                  | 26.4                       | 912                 | 681   | 1593  | 17  | 46     | 169.9 | 0.0898                                  |
| 612   | 20/4.24                        | 19/2.65         | 507             | 104.8           | 611.8                                  | 32.17                      | 1404                | 837   | 2241  | 21  | 72     | 227.5 | 0.0566                                  |
| 612   | 42/2.61                        | 19/2.66         | 507             | 104.8           | 611.8                                  | 32.17                      | 1404                | 837   | 2241  | 21  | 72     | 227.5 | 0.0566                                  |

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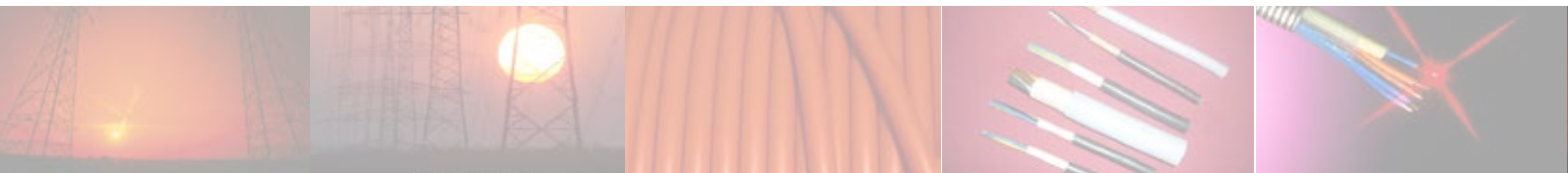
**ALUMINIUM ALLOY CONDUCTOR (AAAC)**

NFC 34 - 125



| Nominal area    | No of wires & wire diameter | Actual Area     | Overall diameter | Weight Ungreased | Grease weight | Calculated breaking load | Max. d.c. resistance @20°C |
|-----------------|-----------------------------|-----------------|------------------|------------------|---------------|--------------------------|----------------------------|
| mm <sup>2</sup> | mm                          | mm <sup>2</sup> | mm               | kg/km            | kg/km         | kN                       | Ohm/km                     |
| 22              | 7/2.0                       | 21.99           | 6                | 60               | 0.6           | 7.08                     | 1.497                      |
| 34.4            | 7/2.5                       | 34.36           | 7.5              | 94               | 1             | 11.07                    | 0.958                      |
| 54.6            | 7/3.15                      | 54.55           | 9.45             | 149              | 1.5           | 17.57                    | 0.6034                     |
| 75.6            | 19/2.25                     | 75.54           | 11.25            | 208              | 5.1           | 24.33                    | 0.4379                     |
| 117             | 19/2.8                      | 117             | 14               | 322              | 7.9           | 37.68                    | 0.2827                     |
| 148             | 19/3.15                     | 148.1           | 15.75            | 407              | 10            | 47.7                     | 0.2234                     |
| 181.6           | 37/2.5                      | 181.6           | 17.5             | 500              | 19            | 58.48                    | 0.1825                     |
| 228             | 37/2.8                      | 227.8           | 19.6             | 627              | 24            | 73.36                    | 0.1455                     |
| 288             | 37/3.15                     | 288.3           | 22.05            | 794              | 30            | 92.85                    | 0.115                      |
| 366             | 37/3.55                     | 366.2           | 24.85            | 1009             | 38            | 117.9                    | 0.09053                    |
| 570             | 61/3.45                     | 570.2           | 31.05            | 1574             | 72            | 183.6                    | 0.05827                    |

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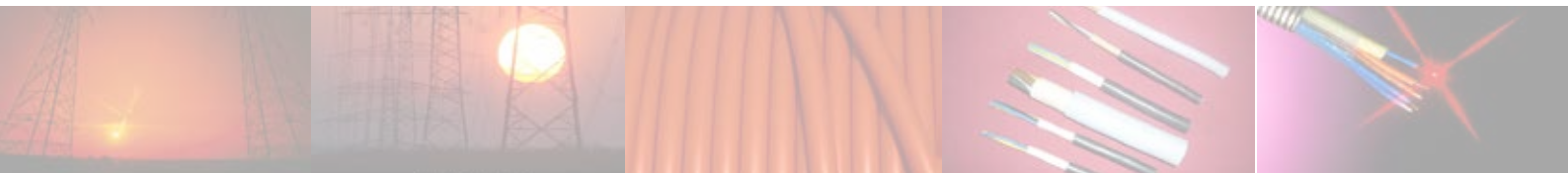


**ALUMINIUM ALLOY CONDUCTOR (AAAC)**

BS 3242



| Nominal area    | Stranding and wire diameter | Actual Area     | Overall diameter | Approx. mass | Calculated breaking load | Max. d.c. resistance @20°C |
|-----------------|-----------------------------|-----------------|------------------|--------------|--------------------------|----------------------------|
| mm <sup>2</sup> | mm                          | mm <sup>2</sup> | mm               | kg/km        | kN                       | Ohm/km                     |
| 25              | 7/2.34                      | 30.1            | 7.02             | 82           | 8.44                     | 1.094                      |
| 30              | 7/2.54                      | 35.47           | 7.62             | 97           | 9.94                     | 0.9281                     |
| 40              | 7/2.95                      | 47.84           | 8.85             | 131          | 13.4                     | 0.688                      |
| 50              | 7/3.30                      | 59.87           | 9.9              | 164          | 16.8                     | 0.5498                     |
| 100             | 7/4.65                      | 118.9           | 13.95            | 325          | 33.3                     | 0.2769                     |
| 150             | 19/3.48                     | 180.7           | 17.4             | 497          | 50.65                    | 0.183                      |
| 175             | 19/3.76                     | 211             | 18.8             | 580          | 59.1                     | 0.1568                     |
| 300             | 37/3.53                     | 362.1           | 24.71            | 997          | 101.5                    | 0.09155                    |

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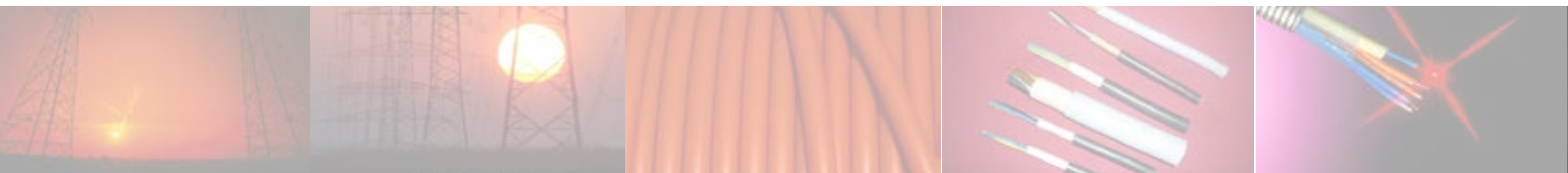
**BARE ALUMINIUM OVERHEAD LINE CONDUCTOR**

ECG E-9 SPECIFICATION / BS 215 Part 1



| Nominal Cross Section. Area, mm <sup>2</sup>                               | 25                    | 50                    | 120                   | 150                   | 265                   | 400                   |
|--|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|
| No. and diameter of wire, mm   | 7/2.13                | 7/3.1                 | 19/2.8                | 19/3.25               | 19/4.22               | 37/3.71               |
| Overall Diameter, mm   | 6.4                   | 9.3                   | 14                    | 16.25                 | 21.1                  | 26                    |
| Conductor weight , kg / km   | 68.4                  | 145                   | 322                   | 434                   | 731                   | 1,102                 |
| Conductor Minimum Breaking Load after Stranding, N                         | 4,500                 | 8,720                 | 19,890                | 26,010                | 45,520                | 64,000                |
| Max. Conductor DC resistance at 20 °C Ohm/km                               | 1.1453                | 0.5409                | 0.2456                | 0.1823                | 0.1081                | 0.0721                |
| Modulus of Elasticity, kN/mm <sup>2</sup>                                  | 58.85                 | 58.85                 | 57                    | 57                    | 57                    | 55                    |
| Temperature co-efficient of linear expansion of hard-drawn copper (per °C) | 23 x 10 <sup>-6</sup> | 23 x 10 <sup>-6</sup> | 23 x 10 <sup>-6</sup> | 23 x 10 <sup>-6</sup> | 23 x 10 <sup>-6</sup> | 23 x 10 <sup>-6</sup> |
| Temperature co-efficient of resistance of hard-drawn aluminium (per °C)    | 0.004                 | 0.004                 | 0.004                 | 0.004                 | 0.004                 | 0.004                 |

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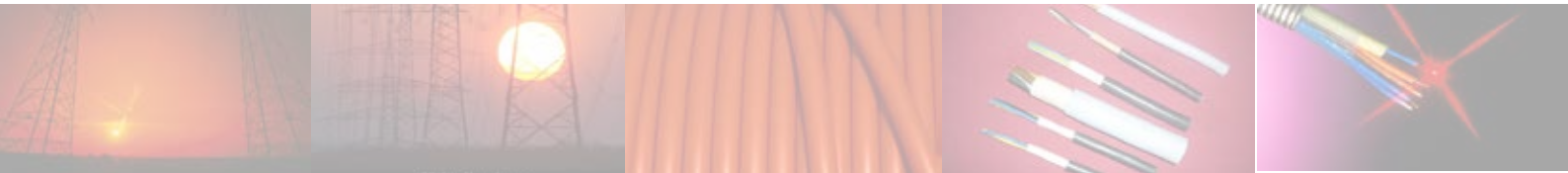


**BARE COPPER OVERHEAD LINE CONDUCTOR (COHL)**

ECG E-9 SPECIFICATION / BS 7884



|  |                     |                     |                     |
|--|---------------------|---------------------|---------------------|
| Nominal Cross Section. Area, mm <sup>2</sup>                               | 16                  | 35                  | 70                  |
| No. and diameter of wire, mm   | 7/1.70              | 7/2.5               | 7/3.55              |
| Overall Diameter, mm   | 5.1                 | 7.5                 | 10.65               |
| Conductor weight , kg / km   | 142.4               | 303.0               | 621.0               |
| max  | 144.0               | 314.9               | 634.7               |
| Single wire weight, kg/km  | 20.6                | 44.52               | 89.74               |
| Conductor Minimum Breaking Load after Stranding, N                         | 5,946               | 14,097              | 26,880              |
| Conductor DC resistance at 20 °C Ohm/km, min                               | 1.128               | 0.5123              | 0.2585              |
| max  | 1.154               | 0.5319              | 0.2637              |
| Modulus of Elasticity, kN/mm <sup>2</sup>                                  | 124                 | 124                 | 124                 |
| Temperature co-efficient of linear expansion of hard-drawn copper (per °C) | $16 \times 10^{-6}$ | $16 \times 10^{-6}$ | $16 \times 10^{-6}$ |
| Temperature co-efficient of resistance of hard-drawn aluminium (per °C)    | 0.00393             | 0.00393             | 0.00393             |

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**BARE COPPER OVERHEAD LINE CONDUCTOR**  
BS 7884



Conductor: Class 2 (hard drawn Copper)

| Code name  | Construction | Overall diameter | Max D. C. resistance @ 20°C | Min. conductor breaking load | Weight |
|------------|--------------|------------------|-----------------------------|------------------------------|--------|
|            | No / Ømm     | mm               | Ω/km                        | N                            | kg/km  |
| COHL 10RS  | 7/1.35       | 4.05             | 1.829                       | 3,752                        | 89.8   |
| COHL 16RS  | 7/1.70       | 5.10             | 1.154                       | 5,946                        | 144    |
| COHL 25RS  | 7/2.1        | 6.30             | 0.7553                      | 9,073                        | 217.3  |
| COHL 35RS  | 7/2.5        | 7.50             | 0.5337                      | 12,860                       | 308    |
| COHL 50RS  | 7/3.0        | 9.00             | 0.3706                      | 18,520                       | 443.5  |
| COHL 70RS  | 19/2.1       | 10.50            | 0.2806                      | 24,090                       | 593.2  |
| COHL 95RS  | 19/2.5       | 12.50            | 0.1980                      | 34,140                       | 840.7  |
| COHL 120RS | 19/2.8       | 14.00            | 0.1578                      | 42,830                       | 1,055  |
| COHL 150RS | 37/2.25      | 15.75            | 0.1264                      | 53,880                       | 1,334  |
| COHL 185RS | 37/2.5       | 17.50            | 0.1024                      | 66,490                       | 1,647  |



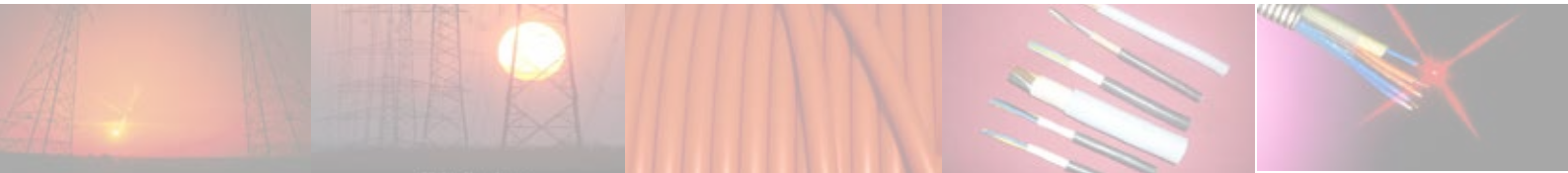
## BARE COPPER ANNEALED CONDUCTOR



Conductor: Class 2 (annealed plain copper)

| Code Name | Construction | Overall Diameter | Weight | Min.Wire Elongation at break | Max D.C. Resistance @ 20°C |
|-----------|--------------|------------------|--------|------------------------------|----------------------------|
|           | No/ Ømm      | mm               | kg/km  | %                            | Ω/km                       |
| CAC 2.5RS | 7/0.67       | 2.01             | 23     | 18                           | 7.41                       |
| CAC 4RS   | 7/0.85       | 2.55             | 36     | 18                           | 4.61                       |
| CAC 6RS   | 7/1.04       | 3.12             | 54     | 18                           | 3.08                       |
| CAC 10RS  | 7/1.35       | 4.05             | 91     | 18                           | 1.83                       |
| CAC 16RS  | 7/1.70       | 5.1              | 144    | 22.5                         | 1.15                       |
| CAC 25RS  | 7/2.14       | 6.4              | 228    | 22.5                         | 0.727                      |
| CAC 35RS  | 7/2.52       | 7.6              | 317    | 22.5                         | 0.524                      |
| CAC 50RS  | 19/1.78      | 8.9              | 429    | 22.5                         | 0.387                      |
| CAC 70RS  | 19/2.14      | 10.7             | 620    | 22.5                         | 0.268                      |
| CAC 95RS  | 19/2.52      | 12.6             | 859    | 22.5                         | 0.193                      |
| CAC 120RS | 37/2.03      | 14.2             | 1086   | 22.5                         | 0.153                      |
| CAC 150RS | 37/2.25      | 15.8             | 1334   | 22.5                         | 0.124                      |
| CAC 185RS | 37/2.52      | 17.6             | 1673   | 22.5                         | 0.0991                     |
| CAC 240RS | 61/2.25      | 20.3             | 2199   | 22.5                         | 0.0754                     |

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**PVC INSULATED SINGLE CORE CABLE WITH HARD DRAWN COPPER / ALUMINIUM CONDUCTOR**  
BS 6485

Conductor:

Insulation:

Minimum insulation thickness:

hard drawn copper conductor class 2 BS 7884 / Aluminium BS 215

PVC TI1

Type 8 (LV) 0.8mm

Type 16 (HV) 1.6mm

**COPPER CONDUCTOR**



| Nominal Cross<br>Section. Area | Stranding and<br>wire diamter | Approx. overall<br>diameter of<br>bare conductor | Max. d.c.<br>resistance<br>@20° C | Approx.<br>breaking load | Approx. overall diameter of<br>covered conductor |         |
|--------------------------------|-------------------------------|--|-----------------------------------|--------------------------|--|---------|
| mm <sup>2</sup>                | mm                            | mm   | Ω/km                              | kN                       | Type 8   | Type 16 |
| 14                             | 7/1.60                        | 4.8  | 1.303                             | 5.744                    | 6.8  | 8.4     |
| 16                             | 3/2.65                        | 5.7  | 1.106                             | 6.59                     | 7.7  | 9.3     |
| 16                             | 7/1.70                        | 5.1  | 1.154                             | 5.946                    | 7.1  | 8.3     |
| 32                             | 3/3.75                        | 8.06   | 0.552                             | 12.71                    | 10.5   | 12.1    |
| 35                             | 7/2.50                        | 7.5  | 0.5387                            | 12.86                    | 9.9  | 11.5    |
| 70                             | 7/3.55                        | 10.65  | 0.2646                            | 26.88                    | 13.5   | 14.7    |
| 100                            | 7/4.30                        | 12.9   | 0.181                             | 37.64                    | 15.7   | 16.9    |

**ALUMINIUM CONDUCTOR**



| Nominal Cross<br>Section. Area | Stranding and<br>wire diameter | Approx. overall<br>diameter of<br>bare conductor | Max. d.c.<br>resistance<br>@20° C | Approx.<br>breaking load | Approx. overall<br>diameter of<br>covered<br>conductor |
|--------------------------------|--------------------------------|--|-----------------------------------|--------------------------|--|
| mm <sup>2</sup>                | mm                             | mm   | Ω/km                              | kN                       | Type 8   |
| 22                             | 7/2.06                         | 6.18   | 1.227                             | 3.99                     | 8.2  |
| 50                             | 7/3.10                         | 9.3  | 0.5419                            | 8.28                     | 11.7   |
| 100                            | 7/4.39                         | 13.17  | 0.2702                            | 16.00                    | 16   |
| 200                            | 19/3.78                        | 18.9   | 0.1349                            | 32.4                     | 21.7   |

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## PVC INSULATED SINGLE CORE CABLE WITH HARD DRAWN COPPER / ALUMINIUM CONDUCTOR

### ECG E-9 SPECIFICATION (LV & HV)

#### COPPER CONDUCTOR



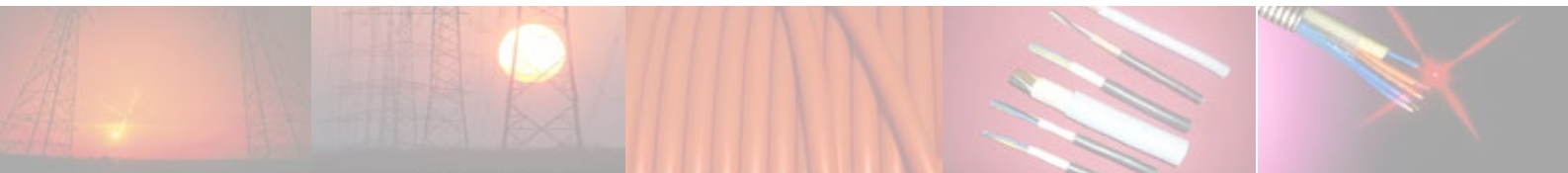
| Nominal Cross Section. Area, mm <sup>2</sup>            | 16             | 35             | 70             |
|---|----------------|----------------|----------------|
| No. and diameter of wire , mm                           | 7/1.70         | 7/2.5          | 7/3.55         |
| Overall Diameter, mm                                    | 5.1            | 7.5            | 10.65          |
| Conductor weight, (kg/km) / std<br>max                  | 142.4<br>144.0 | 308.0<br>314.9 | 621.0<br>634.7 |
| Single wire weight (kg/km) / std<br>max                 | 49.03<br>50.04 | 43.64<br>44.52 | 87.99<br>89.74 |
| Conductor minimum breaking load after<br>stranding, (N) | 5,946          | 14,097         | 26,880         |
| Max. Conductor DC resistance at 20°C,<br>Ohm/km         | 1.154          | 0.5319         | 0.2637         |
| Thickness of insulation (LV), mm                        | 1.00           | 1.00           | 1.00           |
| Thickness of insulation (HV), mm                        | 1.80           | 1.80           | 1.80           |



#### ALUMINIUM CONDUCTOR

| Nominal Cross Section. Area, mm <sup>2</sup>        | 25     | 50     | 120    | 150    | 265     | 400     |          |
|---|--------|--------|--------|--------|---------|---------|----------|
| No. and diameter of wire, mm                        | 7/2.13 | 7/2.10 | 7/3.1  | 19/2.8 | 19/3.25 | 19/4.22 | 37/ 3.71 |
| Overall Diameter, mm                                | 6.4    | 6.30   | 9.3    | 14     | 16.3    | 21.10   | 26.0     |
| Conductor weight - kg / km                          | 68.4   | 66.8   | 144    | 322    | 434     | 731     | 1102     |
| Conductor minimum breaking load afer stranding, (N) | 4,500  | 4,360  | 8,720  | 19,890 | 26,010  | 45,520  | 64,000   |
| Max. Conductor DC resistance at 20°C, Ohm/km        | 1.1453 | 1.1787 | 0.5409 | 0.2456 | 0.1823  | 0.1081  | 0.0721   |
| Thickness of insulation (LV), mm                    | 1.00   | 1.00   | 1.00   | 1.00   | 1.00    | 1.00    | 1.00     |
| Thickness of insulation (HV), mm                    | 1.80   | 1.80   | 1.80   | 1.80   | 1.80    | 1.80    | 1.80     |
|   |        |        |        |        |         |         |          |

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**OVERHEAD LINE SERVICE CABLE**  
**PVC INSULATED PE SHEATHED TWIN-CORE CABLE 600/1000V**  
ECG E-22A / Customer requirement

Conductor:  
Insulation:  
Outer sheath  
Identification of core:

Class 2 ( all aluminium )  
PVC  
PE  
red & black / red & blue



**TWIN CORE PVC INSULATED PE OVERSHEATHED SERVICE CABLES WITH ALUMINIUM**

| Number and nominal cross sectional area of conductors | Construction | Radial thickness of insulation | Radial thickness of sheath | Max. conductor d.c. resistance @ 20°C | Min. insulation resistance @20°C | Min. conductor breaking load |
|---|--------------|--------------------------------|----------------------------|---------------------------------------|----------------------------------|------------------------------|
| mm <sup>2</sup>                                       |              | mm                             | mm                         | Ohm/km                                | Mohm km                          | N                            |
| 2x16  | 2x7/1.70mm   | 1.0                            | 1.0                        | 1.91                                  | 13                               | 2,640                        |
| 2x25  | 2x7/2.10mm   | 1.0                            | 1.0                        | 1.3017                                | 13                               | 4,270                        |

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## LOW VOLTAGE AERIAL BUNDLED CONDUCTOR

BS 7870-5

Conductor  
Insulation

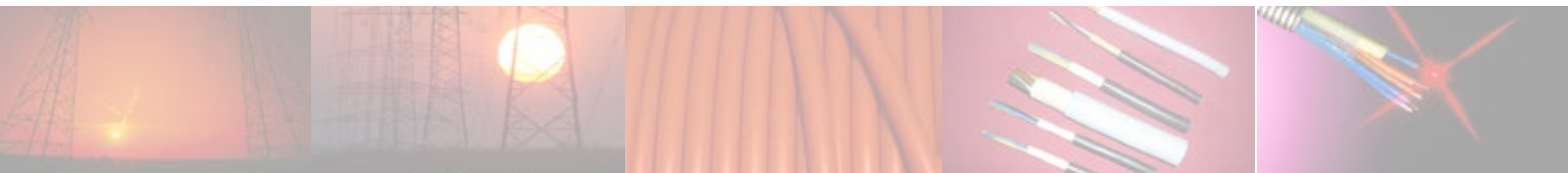
All Aluminium circular  
XLPE



### REQUIREMENTS FOR TWO-, FOUR- AND FIVE-CORE BUNDLES (BS 7870-5)

|  | Nominal cross-sectional area of conductors (mm <sup>2</sup> ) |       |       |       |       |       |
|--|---|-------|-------|-------|-------|-------|
|  | 25  | 35    | 50    | 70    | 95    | 120   |
| Nominal No. of wires in conductor  | 7   | 7     | 19    | 19    | 19    | 19    |
| Diameter of conductor  |   |       |       |       |       |       |
| minimum (mm)   | 5.6   | 6.6   | 7.7   | 9.3   | 11.0  | 12.5  |
| maximum (mm)   | 6.5   | 7.5   | 8.5   | 10.2  | 12.0  | 13.5  |
| Minimum average thickness of insulation (mm)   | 1.3   | 1.3   | 1.5   | 1.5   | 1.7   | 1.7   |
| Minimum thickness of insulation at any point (mm)                                      | 1.07  | 1.07  | 1.25  | 1.25  | 1.43  | 1.43  |
| Max thickness of insulation  |   |       |       |       |       |       |
| phase core excluding ribs (mm)   | 2.1   | 2.1   | 2.1   | 2.1   | 2.1   | 2.1   |
| neutral core including ribs (mm)   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3   | 2.3   |
| Maximum diameter of core   |   |       |       |       |       |       |
| phase core excluding ribs(mm)  | 9.7   | 10.7  | 12.1  | 13.8  | 16.1  | 17.6  |
| neutral core including ribs (mm)   | 10.2  | 11.2  | 12.6  | 14.3  | 16.6  | 18.1  |
| Neutral core identification  |   |       |       |       |       |       |
| number of ribs (min)   | 12  | 12    | 12    | 16    | 16    | 16    |
| Maximum D.C. resistance of conductor in bundle at 20°C (/km)                           | 1.200   | 0.868 | 0.641 | 0.443 | 0.320 | 0.253 |
| Ultimate tensile strength of conductor based on 170N/mm <sup>2</sup> (calculated) (kN) | 4.1   | 5.6   | 7.6   | 11.0  | 15.3  | 19.4  |

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## ALUMINIUM & COPPER BINDING WIRES

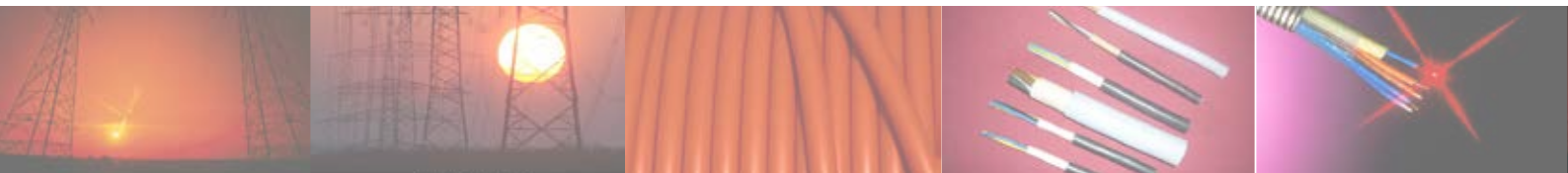
WE CANNOT DIRECT THE WIND, BUT WE CAN ADJUST THE SAILS - BERTHA CALLOWAY

**ALUMINIUM WIRES**

IEC 61089



| Cross - sectional area | Diameter | Min. breaking load |
|------------------------|----------|--------------------|
| mm <sup>2</sup>        | mm       | N                  |
| 1.43                   | 1.35     | 235.95             |
| 2.30                   | 1.71     | 379.50             |
| 3.56                   | 2.13     | 587.40             |
| 5.27                   | 2.59     | 869.55             |
| 5.73                   | 2.70     | 945.45             |
| 6.56                   | 2.89     | 1,082.40           |
| 8.40                   | 3.27     | 1,386.00           |
| 8.50                   | 3.29     | 1,402.50           |
| 9.03                   | 3.39     | 1,489.95           |
| 10.35                  | 3.63     | 1,707.75           |
| 10.52                  | 3.66     | 1,735.80           |
| 10.81                  | 3.71     | 1,783.65           |
| 11.64                  | 3.85     | 1,920.60           |
| 12.19                  | 3.94     | 2,011.35           |
| 12.32                  | 3.96     | 2,032.80           |
| 13.14                  | 4.09     | 2,168.10           |
| 13.14                  | 4.09     | 2,168.10           |
| 13.53                  | 4.15     | 2,232.45           |
| 13.72                  | 4.18     | 2,263.80           |
| 14.73                  | 4.33     | 2,430.45           |
| 15.14                  | 4.39     | 2,498.10           |
| 15.41                  | 4.43     | 2,542.65           |
| 16.40                  | 4.57     | 2,706.00           |
| 16.47                  | 4.58     | 2,717.55           |



**COPPER WIRES**

BS 7884

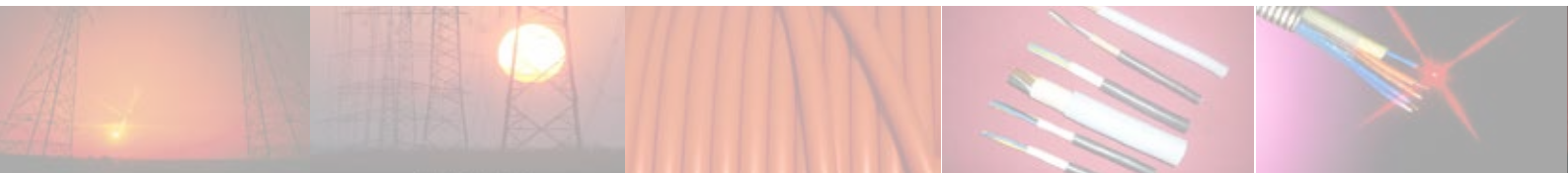


| Cross - sectional area | Diameter | Min. breaking load |
|------------------------|----------|--------------------|
| mm <sup>2</sup>        | mm       | N                  |
| 1.43                   | 1.35     | 583                |
| 2.01                   | 1.60     | 818                |
| 2.27                   | 1.70     | 923                |
| 2.54                   | 1.80     | 1,035              |
| 3.46                   | 2.10     | 1,409              |
| 3.98                   | 2.25     | 1,618              |
| 4.75                   | 2.46     | 1,932              |
| 4.91                   | 2.50     | 1,997              |
| 5.51                   | 2.65     | 2,244              |
| 6.16                   | 2.80     | 2,505              |
| 6.61                   | 2.90     | 2,687              |
| 7.07                   | 3.00     | 2,875              |
| 0.84                   | 3.20     | 3,271              |
| 9.90                   | 3.55     | 4,027              |
| 11.04                  | 3.75     | 4,494              |
| 14.52                  | 4.30     | 5,675              |

**ALUMINIUM AND COPPER BINDING WIRES**

ECG E-11 SPECIFICATION

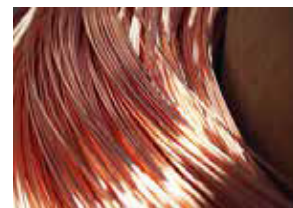
| Material  | Nominal cross section area | Diameter wire | Min. Tensile Strength |
|-----------|----------------------------|---------------|-----------------------|
|           | mm <sup>2</sup>            | mm            | N/mm <sup>2</sup>     |
| Aluminium | 12.6                       | 4.0 + 1%      | 98 - 128              |
| Copper    | 3.14                       | 2.0 + 1%      | 235                   |

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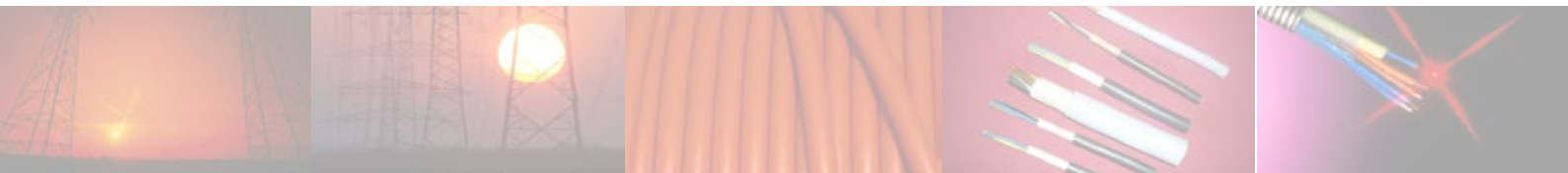
**COPPER ANNEALED WIRE (SOUDRONIC WELDING WIRE)**

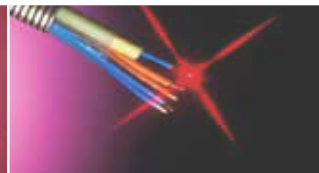
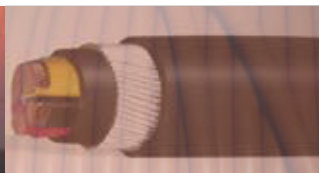
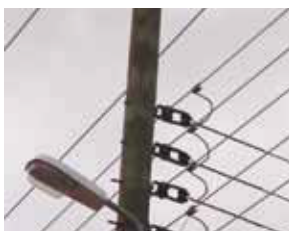
NESTLE GHANA SPEC./CROWN CANS SPEC/CUSTOMER SPEC.

Application: For tin can electrical welding  
Conductor: Class 1 (annealed plain copper)

**SINGLE CORE CABLES WITH CIRCULAR STRANDED COPPER / ALUMINIUM CONDUCTOR**

| Code Name  | Construction | Cross-Sectional Area | Overall diameter | Max. Resistivity@ 20°C | Min. conductivity @ 20°C | Tensile strength  | Elongation at break, wire |
|------------|--------------|----------------------|------------------|------------------------|--------------------------|-------------------|---------------------------|
|            | No / Ømm     | mm <sup>2</sup>      | mm               | Ωmm <sup>2</sup> /m    | m/Ωmm <sup>2</sup>       | N/mm <sup>2</sup> | %                         |
| CAW 1.24mm | 1/1.24       | 1.21                 | 1.24+0/0.04      | 0.01739                | 57.50                    | 245-285           | 22-28                     |
| CAW 1.38mm | 1/1.38       | 1.5                  | 1.38+0/0.04      | 0.01739                | 57.50                    | 245-285           | 22-28                     |

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## LOW VOLTAGE POWER CABLES



IT IS NEITHER THE STRONG NOR THE MOST INTELLIGENT THAT SURVIVE.  
IT IS THE MOST RESPONSIVE TO CHANGE - CHARLES DARWIN



# CABLES OF OUR MANUFACTURE

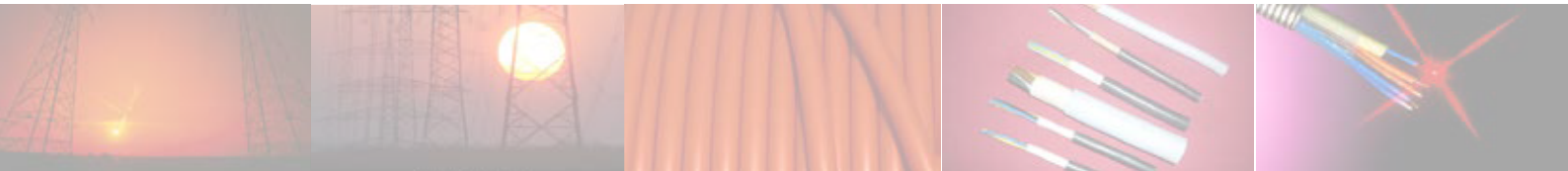
## LOW VOLTAGE POWER CABLES

LOW VOLTAGE PVC/XLPE INSULATED ARMoured AND UNARMoured POWER CABLE  
IEC 60502-1, BS 7889



### APPLICATION:

UNDERGROUND POWER DISTRIBUTION / OUTDOOR INSTALLATIONS



## SINGLE-CORE PVC INSULATED UNARMoured CABLE 600/1000V

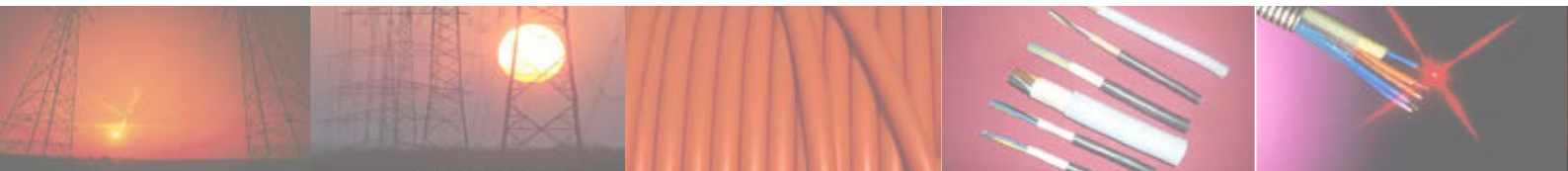
IEC 60502-1



Conductor: Class 2 ( annealed plain copper/aluminium )  
 Insulation: PVC  
 Outer sheath: PVC  
 Identification of cores: Red/Black/Customer requirement

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                           |
| 10  | 1.0                     | 1.4                       | 12.0                         |
| 16  | 1.0                     | 1.4                       | 13.0                         |
| 25  | 1.2                     | 1.4                       | 14.6                         |
| 35  | 1.2                     | 1.4                       | 15.8                         |
| 50  | 1.4                     | 1.4                       | 17.5                         |
| 70  | 1.6                     | 1.5                       | 19.5                         |
| 95  | 1.6                     | 1.6                       | 22.0                         |
| 120                                       | 1.6                     | 1.6                       | 23.6                         |
| 150                                       | 1.8                     | 1.7                       | 25.8                         |
| 185                                       | 2.0                     | 1.8                       | 28.2                         |
| 240                                       | 2.2                     | 1.9                       | 31.5                         |
| 300                                       | 2.4                     | 2.0                       | 34.5                         |
| 400                                       | 2.6                     | 2.1                       | 38.1                         |
| 500                                       | 2.8                     | 2.2                       | 41.8                         |
| 630                                       | 2.8                     | 2.3                       | 46.0                         |

WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES  
 FOR SIZES NOT SHOWN HERE, PLEASE CONTACT - [sales@tropicalcables.com](mailto:sales@tropicalcables.com)



PVC INSULATED MULTICORE UNARMoured CABLES FOR VOLTAGES OF 600/1000V  
IEC 60502-1



|                         |   |
|-------------------------|---|
| Conductor:              | class 2 (annealed plain copper/ aluminium)  |
| Insulation:             | PVC   |
| Inner & outer sheath:   | PVC   |
| Identification of core: | two core - brown,blue /three-core - brown, black, grey<br>four-core - blue, brown, grey, black / five-core - green-yellow, blue, brown, black, grey |

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                        | mm                           |

TWO-CORE CABLES

|                  |     |     |     |      |
|------------------|-----|-----|-----|------|
| 1.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 14.9 |
| 2.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 15.8 |
| 4 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 17.7 |
| 6 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 18.8 |
| 10 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 20.7 |
| 16 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 22.8 |
| 25 <sup>a</sup>  | 1.2 | 1.0 | 1.8 | 26.2 |
| 35 <sup>a</sup>  | 1.2 | 1.0 | 1.8 | 28.5 |
| 50 <sup>a</sup>  | 1.4 | 1.0 | 1.9 | 32.4 |
| 70 <sup>a</sup>  | 1.4 | 1.2 | 2.0 | 36.4 |
| 95 <sup>a</sup>  | 1.6 | 1.2 | 2.2 | 41.4 |

THREE-CORE CABLES

|                  |     |     |     |      |
|------------------|-----|-----|-----|------|
| 1.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 15.4 |
| 2.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 16.4 |
| 4 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 18.4 |
| 6 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 19.6 |
| 10 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 21.6 |
| 16 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 23.9 |
| 25 <sup>b</sup>  | 1.2 | 1.0 | 1.8 | 24.0 |
| 35 <sup>b</sup>  | 1.2 | 1.0 | 1.8 | 26.0 |
| 50 <sup>b</sup>  | 1.4 | 1.0 | 1.9 | 28.2 |
| 70 <sup>b</sup>  | 1.4 | 1.2 | 2.0 | 32.6 |
| 95 <sup>b</sup>  | 1.6 | 1.2 | 2.1 | 36.5 |
| 150 <sup>b</sup> | 1.8 | 1.2 | 2.2 | 42.3 |
| 185 <sup>b</sup> | 2.0 | 1.4 | 2.4 | 46.9 |
| 240 <sup>b</sup> | 2.2 | 1.4 | 2.5 | 51.9 |



**PVC INSULATED MULTICORE UNARMoured CABLES FOR VOLTAGES OF 600/1000V**

IEC 60502-1 (CONT'D)



| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                        | mm                           |

**FOUR-CORE CABLES**

|                  |     |     |     |      |
|------------------|-----|-----|-----|------|
| 1.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 16.2 |
| 2.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 17.3 |
| 4 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 19.6 |
| 6 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 21.0 |
| 10 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 23.2 |
| 16 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 25.8 |
| 25 <sup>b</sup>  | 1.2 | 1.0 | 1.8 | 27.1 |
| 35 <sup>b</sup>  | 1.2 | 1.0 | 1.8 | 29.2 |
| 50 <sup>b</sup>  | 1.4 | 1.2 | 1.9 | 32.9 |
| 70 <sup>b</sup>  | 1.4 | 1.2 | 2.1 | 37.1 |
| 95 <sup>b</sup>  | 1.6 | 1.2 | 2.2 | 41.7 |
| 120 <sup>b</sup> | 1.6 | 1.2 | 2.3 | 44.9 |
| 150 <sup>b</sup> | 1.8 | 1.4 | 2.5 | 49.5 |
| 185 <sup>b</sup> | 2.0 | 1.4 | 2.6 | 54.2 |
| 240 <sup>b</sup> | 2.2 | 1.6 | 2.8 | 60.8 |

**FIVE-CORE CABLES**

|                  |     |     |     |      |
|------------------|-----|-----|-----|------|
| 1.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 17.1 |
| 2.5 <sup>a</sup> | 0.8 | 1.0 | 1.8 | 18.4 |
| 4 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 20.9 |
| 6 <sup>a</sup>   | 1.0 | 1.0 | 1.8 | 22.4 |
| 10 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 24.9 |
| 16 <sup>a</sup>  | 1.0 | 1.0 | 1.8 | 27.8 |
| 25 <sup>a</sup>  | 1.2 | 1.0 | 1.9 | 32.6 |
| 35 <sup>a</sup>  | 1.2 | 1.0 | 1.9 | 35.7 |
| 50 <sup>a</sup>  | 1.4 | 1.2 | 2.1 | 41.2 |

a circular stranded conductor (class 2)

b sector shaped stranded conductor (class 2)



**CONTROL CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1



Conductor:

Insulation:

Inner & outer sheath:

Identification of core:

class 1&2 (annealed plain copper)

PVC

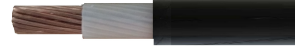
PVC

five core - green-yellow, blue, brow, black, grey

above 5-core - number printing on white/black insulation, one is green-yellow

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                        | mm                           |
| 7 x 1.5                                   | 0.8                     | 1.0                       | 1.8                       | 18.1                         |
| 8 x 1.5                                   | 0.8                     | 1.0                       | 1.8                       | 19.5                         |
| 9 x 1.5                                   | 0.8                     | 1.0                       | 1.8                       | 20.6                         |
| 11 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 21.7                         |
| 12 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 21.7                         |
| 13 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 22.2                         |
| 16 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 23.5                         |
| 18 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 24.4                         |
| 19 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 24.4                         |
| 21 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 25.5                         |
| 31 x 1.5                                  | 0.8                     | 1.0                       | 1.8                       | 29.5                         |
| 41 x 1.5                                  | 0.8                     | 1.0                       | 1.9                       | 33.1                         |
| 48 x 1.5                                  | 0.8                     | 1.2                       | 2.0                       | 35.2                         |
| 7 x 2.5                                   | 0.8                     | 1.0                       | 1.8                       | 19.4                         |
| 12 x 2.5                                  | 0.8                     | 1.0                       | 1.8                       | 23.6                         |
| 13 x 2.5                                  | 0.8                     | 1.0                       | 1.8                       | 24.1                         |
| 19 x 2.5                                  | 0.8                     | 1.0                       | 1.8                       | 26.7                         |
| 61 x 2.5                                  | 0.8                     | 1.2                       | 2.2                       | 42.3                         |
| 6 x 4                                     | 1.0                     | 1.0                       | 1.8                       | 23.3                         |
| 7 x 4                                     | 1.0                     | 1.0                       | 1.8                       | 23.3                         |
| 12 x 4                                    | 1.0                     | 1.0                       | 1.8                       | 27.5                         |
| 14 x 4                                    | 1.0                     | 1.0                       | 1.8                       | 28.7                         |
| 16 x 4                                    | 1.0                     | 1.0                       | 1.8                       | 30.0                         |
| 19 x 4                                    | 1.0                     | 1.0                       | 1.9                       | 31.6                         |
| 24 x 4                                    | 1.0                     | 1.2                       | 2.0                       | 36.7                         |
| 30 x 4                                    | 1.0                     | 1.2                       | 2.1                       | 38.8                         |
| 37 x 4                                    | 1.0                     | 1.2                       | 2.2                       | 41.7                         |
| 6 x 6                                     | 1.0                     | 1.0                       | 1.8                       | 24.0                         |



**THERMOSETTING INSULATED (XLPE), UNARMoured CABLES FOR A VOLTAGE OF 600 / 1000V**  
 BS 7889


Conductor: class 2 (annealed plain copper / Aluminium)  
 Insulation: XLPE  
 Outer sheath: PVC  
 Identification of cores: Red

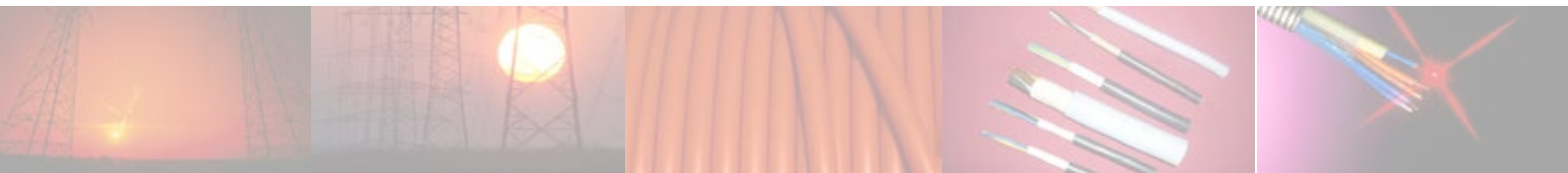
**SINGLE CORE CABLES WITH CIRCULAR STRANDED COPPER / ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>  | mm                      | mm                        | mm                           |
| 50   | 1.0                     | 1.4                       | 16.7                         |
| 70   | 1.1                     | 1.4                       | 18.7                         |
| 95   | 1.1                     | 1.5                       | 21.8                         |
| 120  | 1.2                     | 1.5                       | 22.4                         |
| 150  | 1.4                     | 1.6                       | 24.8                         |
| 185  | 1.6                     | 1.6                       | 27.0                         |
| 240  | 1.7                     | 1.7                       | 30.1                         |
| 300  | 1.8                     | 1.8                       | 32.9                         |
| 400  | 2.0                     | 1.9                       | 36.5                         |
| 500  | 2.2                     | 2.0                       | 40.2                         |
| 630  | 2.4                     | 2.2                       | 45.0                         |
| 800  | 2.6                     | 2.3                       | 49.9                         |
| 1000   | 2.8                     | 2.4                       | 55.0                         |

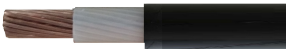
a circular stranded conductor (class 2)

**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES**

**FOR SIZES NOT SHOWN HERE, PLEASE CONTACT - [sales@tropicalcables.com](mailto:sales@tropicalcables.com)**



**XLPE INSULATED UNARMoured CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1



Conductor:

Insulation:

Outer sheath:

Identification of cores:

Class 2 ( annealed plain copper/aluminium )

XLPE

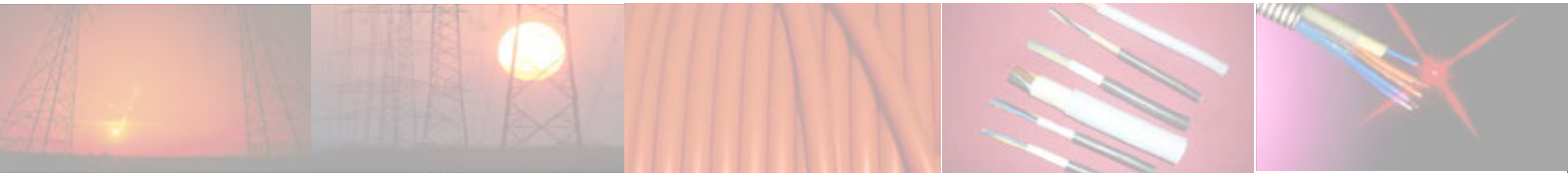
PVC

Red/Black/Customer requirement

**SINGLE-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                           |
| 25  | 0.9                     | 1.4                       | 14.0                         |
| 35  | 0.9                     | 1.4                       | 15.2                         |
| 50  | 1.0                     | 1.4                       | 16.7                         |
| 70  | 1.1                     | 1.5                       | 18.9                         |
| 95  | 1.1                     | 1.5                       | 20.8                         |
| 120                                       | 1.2                     | 1.6                       | 22.8                         |
| 150                                       | 1.4                     | 1.6                       | 24.8                         |
| 185                                       | 1.6                     | 1.8                       | 31.4                         |
| 240                                       | 1.7                     | 1.8                       | 30.3                         |
| 300                                       | 1.8                     | 1.9                       | 33.1                         |
| 400                                       | 2.0                     | 2.0                       | 36.7                         |
| 500                                       | 2.2                     | 2.2                       | 40.6                         |
| 630                                       | 2.4                     | 2.3                       | 45.2                         |

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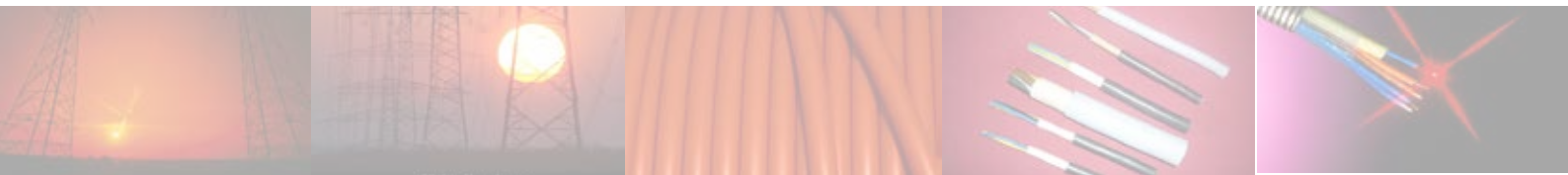
**XLPE INSULATED UNARMoured CABLES FOR VOLTAGES OF 600/1000V**

IEC 60502-1

Conductor: class 2 (annealed plain copper/ aluminium)  
Insulation: XLPE  
Inner & outer sheath: PVC  
Identification of core: brown, blue / red, black

**TWO-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                        | mm                           |
| 1.5                                       | 0.7                     | 1.0                       | 1.8                       | 14.52                        |
| 2.5                                       | 0.7                     | 1.0                       | 1.8                       | 15.42                        |
| 4   | 0.7                     | 1.0                       | 1.8                       | 16.50                        |
| 6   | 0.7                     | 1.0                       | 1.8                       | 17.64                        |
| 10  | 0.7                     | 1.0                       | 1.8                       | 19.50                        |
| 16  | 0.7                     | 1.0                       | 1.8                       | 21.60                        |
| 25  | 0.9                     | 1.0                       | 1.8                       | 25.0                         |
| 35  | 0.9                     | 1.0                       | 1.8                       | 27.4                         |
| 50  | 1.0                     | 1.0                       | 1.8                       | 30.4                         |
| 70  | 1.1                     | 1.2                       | 2.0                       | 35.2                         |
| 95  | 1.1                     | 1.2                       | 2.2                       | 39.4                         |
| 120                                       | 1.2                     | 1.2                       | 2.2                       | 43.0                         |
| 150                                       | 1.4                     | 1.4                       | 2.4                       | 47.8                         |
| 185                                       | 1.6                     | 1.6                       | 2.6                       | 53.0                         |
| 240                                       | 1.7                     | 1.7                       | 2.8                       | 59.4                         |

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**XLPE INSULATED UNARMoured CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1

Conductor:

Insulation:

Inner & outer sheath:

Identification of core:

class 2 (annealed plain copper/ aluminium)

XLPE

PVC

brown, black, grey / red, yellow, blue

**THREE - CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross section-<br>al area of conductor | Thickness of insulation | Thickness of inner<br>sheath | Thickness of outer<br>sheath | Approximate overall<br>diameter |
|--|-------------------------|------------------------------|------------------------------|---------------------------------|
| mm <sup>2</sup>                                | mm                      | mm                           | mm                           | mm                              |
| 1.5 <sup>a</sup>                               | 0.7                     | 1.0                          | 1.8                          | 14.98                           |
| 2.5 <sup>a</sup>                               | 0.7                     | 1.0                          | 1.8                          | 15.95                           |
| 4 <sup>a</sup>                                 | 0.7                     | 1.0                          | 1.8                          | 17.11                           |
| 6 <sup>a</sup>                                 | 0.7                     | 1.0                          | 1.8                          | 18.34                           |
| 10 <sup>a</sup>                                | 0.7                     | 1.0                          | 1.8                          | 20.34                           |
| 16 <sup>a</sup>                                | 0.7                     | 1.0                          | 1.8                          | 22.6                            |
| 25 <sup>a</sup>                                | 0.9                     | 1.0                          | 1.8                          | 26.4                            |
| 25 <sup>b</sup>                                | 0.9                     | 1.0                          | 1.8                          | 22.7                            |
| 35 <sup>a</sup>                                | 0.9                     | 1.0                          | 1.8                          | 28.8                            |
| 35 <sup>b</sup>                                | 0.9                     | 1.0                          | 1.8                          | 24.7                            |
| 50 <sup>a</sup>                                | 1.0                     | 1.0                          | 1.9                          | 32.3                            |
| 50 <sup>b</sup>                                | 1.0                     | 1.0                          | 1.8                          | 26.3                            |
| 70 <sup>a</sup>                                | 1.1                     | 1.2                          | 2.1                          | 37.5                            |
| 70 <sup>b</sup>                                | 1.1                     | 1.0                          | 1.8                          | 30.5                            |
| 95 <sup>a</sup>                                | 1.1                     | 1.2                          | 2.2                          | 41.8                            |
| 95 <sup>b</sup>                                | 1.1                     | 1.2                          | 2.0                          | 34.2                            |
| 120 <sup>a</sup>                               | 1.2                     | 1.4                          | 2.4                          | 46.5                            |
| 120 <sup>b</sup>                               | 1.2                     | 1.2                          | 2.1                          | 37.3                            |
| 150 <sup>a</sup>                               | 1.4                     | 1.4                          | 2.5                          | 50.9                            |
| 150 <sup>b</sup>                               | 1.4                     | 1.2                          | 2.2                          | 40.6                            |
| 185 <sup>a</sup>                               | 1.6                     | 1.6                          | 2.7                          | 56.6                            |
| 185 <sup>b</sup>                               | 1.6                     | 1.4                          | 2.3                          | 45.0                            |
| 240 <sup>a</sup>                               | 1.7                     | 1.6                          | 2.9                          | 63.1                            |
| 240 <sup>b</sup>                               | 1.7                     | 1.4                          | 2.5                          | 49.8                            |

a circular stranded conductor (class 2)  
b sector shaped stranded conductor (class 2)

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**XLPE INSULATED UNARMoured CABLES FOR VOLTAGES OF 600/1000V**

IEC 60502-1

|                         |   |
|-------------------------|---|
| Conductor:              | class 2 (annealed plain copper/ aluminium)          |
| Insulation:             | XLPE  |
| Inner & outer sheath:   | PVC   |
| Identification of core: | blue, brown, black, grey / red, yellow, blue, black |

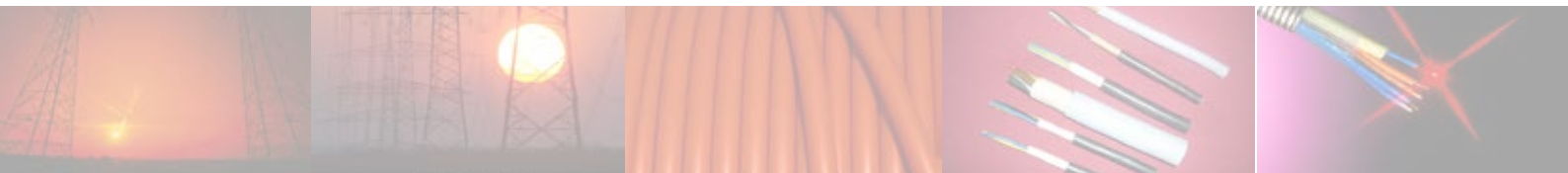
**FOUR - CORE CABLES WITH CIRCULAR STRANDED COPPER / ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                        | mm                           |
| 1.5 <sup>a</sup>                          | 0.7                     | 1.0                       | 1.8                       | 15.8                         |
| 2.5 <sup>a</sup>                          | 0.7                     | 1.0                       | 1.8                       | 16.9                         |
| 4 <sup>a</sup>                            | 0.7                     | 1.0                       | 1.8                       | 18.1                         |
| 6 <sup>a</sup>                            | 0.7                     | 1.0                       | 1.8                       | 19.5                         |
| 10 <sup>a</sup>                           | 0.7                     | 1.0                       | 1.8                       | 21.8                         |
| 16 <sup>a</sup>                           | 0.7                     | 1.0                       | 1.8                       | 24.3                         |
| 25 <sup>a</sup>                           | 0.9                     | 1.0                       | 1.8                       | 28.4                         |
| 25 <sup>b</sup>                           | 0.9                     | 1.0                       | 1.8                       | 25.8                         |
| 35 <sup>a</sup>                           | 0.9                     | 1.0                       | 1.9                       | 31.4                         |
| 35 <sup>b</sup>                           | 0.9                     | 1.0                       | 1.8                       | 26.1                         |
| 50 <sup>a</sup>                           | 1.0                     | 1.2                       | 2.0                       | 35.7                         |
| 50 <sup>b</sup>                           | 1.0                     | 1.0                       | 1.8                       | 27.8                         |
| 70 <sup>a</sup>                           | 1.1                     | 1.2                       | 2.2                       | 40.9                         |
| 70 <sup>b</sup>                           | 1.1                     | 1.2                       | 1.9                       | 33.0                         |
| 95 <sup>a</sup>                           | 1.1                     | 1.4                       | 2.4                       | 46.4                         |
| 95 <sup>b</sup>                           | 1.1                     | 1.2                       | 2.0                       | 36.3                         |
| 120 <sup>a</sup>                          | 1.2                     | 1.4                       | 2.5                       | 50.9                         |
| 120 <sup>b</sup>                          | 1.2                     | 1.2                       | 2.1                       | 39.6                         |
| 150 <sup>a</sup>                          | 1.4                     | 1.4                       | 2.7                       | 56.0                         |
| 150 <sup>b</sup>                          | 1.4                     | 1.4                       | 2.3                       | 43.9                         |
| 185 <sup>a</sup>                          | 1.6                     | 1.6                       | 2.9                       | 62.3                         |
| 185 <sup>b</sup>                          | 1.6                     | 1.4                       | 2.4                       | 48.1                         |
| 240 <sup>a</sup>                          | 1.7                     | 1.6                       | 3.1                       | 69.5                         |
| 240 <sup>b</sup>                          | 1.7                     | 1.6                       | 2.6                       | 53.7                         |

a circular stranded conductor (class 2)

b sector shaped stranded conductor (class 2)

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**XLPE INSULATED UNARMoured MULTICORE CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1

|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/ aluminium)   |
| Insulation:             | XLPE   |
| Inner & outer sheath:   | PVC  |
| Identification of core: | Five core: green-yellow, blue, brown, black, grey/ red, yellow, blue, black, green-yellow<br>Multicore: numbering printing on white/ black insulation, one is green-yellow |

**MULTI- CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|---------------------------|------------------------------|
| No x mm <sup>2</sup>                      | mm                      | mm                        | mm                        | mm                           |
| 2x2.5                                     | 0.7                     | 1.0                       | 1.8                       | 15.42                        |
| 3x2.5                                     | 0.7                     | 1.0                       | 1.8                       | 15.95                        |
| 4x2.5                                     | 0.7                     | 1.0                       | 1.8                       | 16.83                        |
| 5x2.5                                     | 0.7                     | 1.0                       | 1.8                       | 17.81                        |
| 7x2.5                                     | 0.7                     | 1.0                       | 1.8                       | 18.83                        |
| 10x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 22.24                        |
| 12x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 22.77                        |
| 13x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 23.26                        |
| 14x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 23.65                        |
| 19x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 25.65                        |
| 24x2.5                                    | 0.7                     | 1.0                       | 1.8                       | 29.06                        |
| 37x2.5                                    | 0.7                     | 1.0                       | 1.9                       | 32.67                        |
| 61x2.5                                    | 0.7                     | 1.2                       | 2.2                       | 40.49                        |

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## PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V

IEC 60502-1

Conductor: class 2 (annealed plain copper/ aluminium)  
 Insulation: PVC  
 Inner & outer sheath: PVC  
 Identification of core: black /red  
 Armouring: Aluminium wire armour

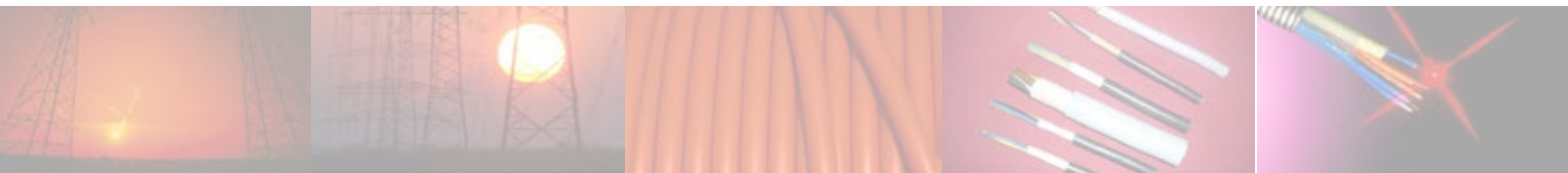


### SINGLE-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of inner sheath | Nominal Aluminium armour wire diameter | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|--|---------------------------|------------------------------|
| mm <sup>2</sup>  | mm                      | mm                        | mm                                     | mm                        | mm                           |
| 50   | 1.4                     | 1.0                       | 1.7                                    | 1.8                       | 25.7                         |
| 70   | 1.4                     | 1.0                       | 1.7                                    | 1.8                       | 27.5                         |
| 95   | 1.6                     | 1.0                       | 1.7                                    | 1.8                       | 29.8                         |
| 120  | 1.6                     | 1.0                       | 1.7                                    | 1.8                       | 31.4                         |
| 150  | 1.8                     | 1.0                       | 1.7                                    | 1.9                       | 33.6                         |
| 185  | 2.0                     | 1.0                       | 1.7                                    | 1.9                       | 35.8                         |
| 240  | 2.2                     | 1.2                       | 2.0                                    | 2.1                       | 40.2                         |
| 300  | 2.4                     | 1.2                       | 2.0                                    | 2.2                       | 43.3                         |
| 400  | 2.6                     | 1.2                       | 2.0                                    | 2.3                       | 47.0                         |
| 500  | 2.8                     | 1.2                       | 2.5                                    | 2.4                       | 51.6                         |
| 630  | 2.8                     | 1.4                       | 2.5                                    | 2.6                       | 56.4                         |

a circular stranded conductor (class 2).

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**PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1



|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/ aluminium)                               |
| Insulation:             | PVC  |
| Inner & outer sheath:   | PVC  |
| Identification of core: | brown,blue /red, black   |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability |

**TWO-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>  | mm                      | mm                        | mm                   | mm                        | mm                           |
| 1.5  | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 20.9                         |
| 2.5  | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 21.8                         |
| 4  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 23.7                         |
| 6  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 24.8                         |
| 10   | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 26.7                         |
| 16   | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 28.8                         |
| 25   | 1.2                     | 1.0                       | 2.0                  | 1.8                       | 32.3                         |
| 35   | 1.2                     | 1.0                       | 2.0                  | 1.9                       | 34.7                         |
| 50   | 1.4                     | 1.0                       | 2.0                  | 2.0                       | 38.4                         |
| 70   | 1.4                     | 1.0                       | 2.0                  | 2.2                       | 42.4                         |
| 95   | 1.6                     | 1.2                       | 2.0                  | 2.3                       | 47.6                         |
| 120  | 1.6                     | 1.2                       | 2.5                  | 2.5                       | 52.2                         |

a circular stranded conductor (class 2)

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### PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V IEC 60502-1



|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/ aluminium)                               |
| Insulation:             | PVC  |
| Inner & outer sheath:   | PVC  |
| Identification of core: | brown,black, grey/ red, yellow, blue                                     |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability |

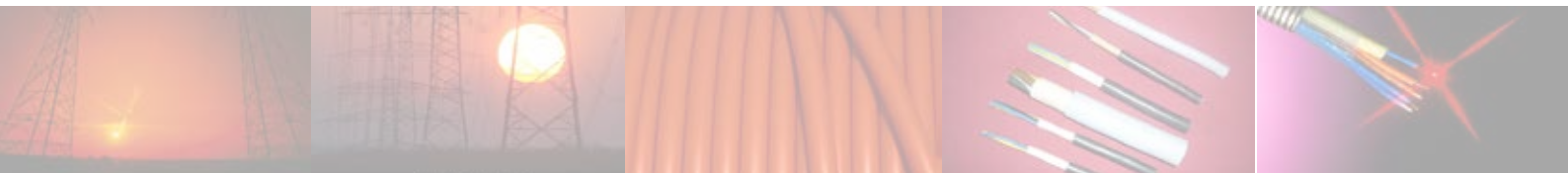
### THREE-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                   | mm                        | mm                           |
| 1.5 <sup>a</sup>                          | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 21.4                         |
| 2.5 <sup>a</sup>                          | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 22.4                         |
| 4 <sup>a</sup>                            | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 24.4                         |
| 6 <sup>a</sup>                            | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 25.7                         |
| 10 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 27.7                         |
| 16 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 29.9                         |
| 25 <sup>a</sup>                           | 1.2                     | 1.0                       | 2.0                  | 1.9                       | 33.9                         |
| 25 <sup>b</sup>                           | 1.2                     | 1.0                       | 2.0                  | 1.8                       | 30.0                         |
| 35 <sup>a</sup>                           | 1.2                     | 1.0                       | 2.0                  | 2.0                       | 36.5                         |
| 35 <sup>b</sup>                           | 1.2                     | 1.0                       | 2.0                  | 1.8                       | 32.0                         |
| 50 <sup>b</sup>                           | 1.4                     | 1.2                       | 2.0                  | 1.9                       | 34.2                         |
| 70 <sup>b</sup>                           | 1.4                     | 1.2                       | 2.0                  | 2.0                       | 38.2                         |
| 95 <sup>b</sup>                           | 1.6                     | 1.2                       | 2.5                  | 2.2                       | 42.7                         |
| 120 <sup>b</sup>                          | 1.6                     | 1.4                       | 2.5                  | 2.2                       | 45.2                         |
| 150 <sup>b</sup>                          | 1.8                     | 1.4                       | 2.5                  | 2.4                       | 49.7                         |
| 185 <sup>b</sup>                          | 2.0                     | 1.6                       | 3.0                  | 2.5                       | 54.1                         |
| 240 <sup>b</sup>                          | 2.2                     | 1.6                       | 3.0                  | 2.7                       | 59.3                         |

a circular stranded conductor (class 2)

b sector shaped stranded conductor (class 2)

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**PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1



Conductor:

Insulation:

Inner & outer sheath:

Identification of core:

Armouring:

class 2 (annealed plain copper/ aluminium)

PVC

PVC

blue, brown, black, grey / red, yellow, blue, black

Aluminium Wire Armour (AWA)

Steel Wire Armour subject to availability

**FOUR-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                   | mm                        | mm                           |
| 1.5 <sup>a</sup>                          | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 22.2                         |
| 2.5 <sup>a</sup>                          | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 23.3                         |
| 4 <sup>a</sup>                            | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 25.6                         |
| 6 <sup>a</sup>                            | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 27.0                         |
| 10 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 29.2                         |
| 16 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 31.8                         |
| 25 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 2.0                       | 36.3                         |
| 25 <sup>b</sup>                           | 1.2                     | 1.0                       | 2.0                  | 1.9                       | 33.1                         |
| 35 <sup>a</sup>                           | 1.0                     | 1.0                       | 2.0                  | 2.1                       | 39.3                         |
| 35 <sup>b</sup>                           | 1.2                     | 1.0                       | 2.0                  | 1.9                       | 35.4                         |
| 50 <sup>b</sup>                           | 1.4                     | 1.0                       | 2.0                  | 2.0                       | 38.7                         |
| 70 <sup>b</sup>                           | 1.4                     | 1.2                       | 2.0                  | 2.2                       | 43.3                         |
| 95 <sup>b</sup>                           | 1.6                     | 1.2                       | 2.5                  | 2.3                       | 47.9                         |
| 120 <sup>b</sup>                          | 1.6                     | 1.2                       | 2.5                  | 2.5                       | 52.3                         |
| 150 <sup>b</sup>                          | 1.8                     | 1.4                       | 2.5                  | 2.6                       | 56.7                         |
| 185 <sup>b</sup>                          | 2.0                     | 1.4                       | 2.5                  | 2.8                       | 61.6                         |
| 240 <sup>b</sup>                          | 2.2                     | 1.6                       | 3.0                  | 3.0                       | 69.2                         |

a circular stranded conductor (class 2)  
b sector shaped stranded conductor (class 2)

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**PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V**

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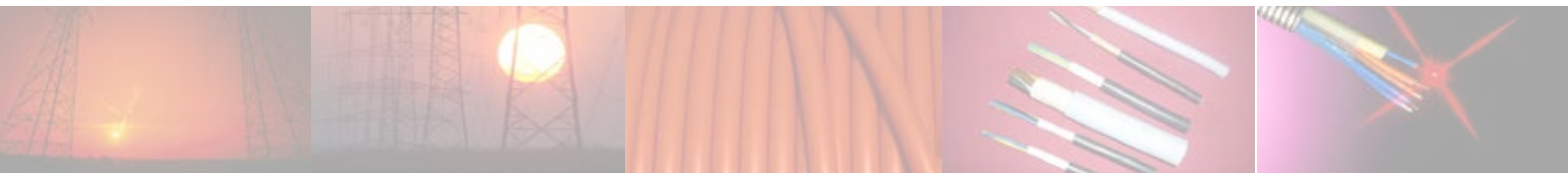
|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/ aluminium)                                     |
| Insulation:             | PVC  |
| Inner & outer sheath:   | PVC  |
| Identification of core: | green-yellow, blue, brown, black, grey /red, yellow, blue, black, green-yellow |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability       |

**FIVE-CORE CABLES WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>  | mm                      | mm                        | mm                   | mm                        | mm                           |
| 1.5  | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 23.1                         |
| 2.5  | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 24.4                         |
| 4  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 26.9                         |
| 6  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 28.4                         |
| 10   | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 30.9                         |
| 16   | 1.0                     | 1.0                       | 2.0                  | 1.9                       | 34.0                         |
| 25   | 1.2                     | 1.0                       | 2.0                  | 2.0                       | 38.8                         |
| 35   | 1.2                     | 1.2                       | 2.0                  | 2.2                       | 42.7                         |
| 50   | 1.4                     | 1.2                       | 2.0                  | 2.3                       | 47.6                         |

<sup>a</sup> a circular stranded conductor (class 2)

**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES  
FOR SIZES NOT SHOWN HERE, PLEASE CONTACT - [sales@tropicalcables.com](mailto:sales@tropicalcables.com)**



**PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1



|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper)  |
| Insulation:             | PVC  |
| Inner & outer sheath:   | PVC  |
| Identification of core: | numbering printing on white / black insulation, one is green-yellow.     |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability |

**ARMoured AUXILIARY CABLES**

| Number of cores<br>cross sectional<br>area of conductor <sup>a</sup> | Thickness of<br>insulation | Thickness of<br>inner sheath | Nominal AWA<br>diameter | Thickness of<br>outer sheath | Approximate<br>overall diameter |
|--|----------------------------|------------------------------|-------------------------|------------------------------|---------------------------------|
| No x mm <sup>2</sup>   | mm                         | mm                           | mm                      | mm                           | mm                              |
| 7x1.5  | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 24.1                            |
| 8x1.5  | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 25.5                            |
| 9x1.5  | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 26.6                            |
| 11x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 27.2                            |
| 12x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 27.7                            |
| 13x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 28.5                            |
| 14x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 28.5                            |
| 16x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 29.5                            |
| 18x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 30.4                            |
| 19x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 29.4                            |
| 21x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.8                          | 31.5                            |
| 24x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.9                          | 33.8                            |
| 27x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.9                          | 34.2                            |
| 30x1.5   | 0.8                        | 1.0                          | 2.0                     | 1.9                          | 35.1                            |
| 31x1.5   | 0.8                        | 1.0                          | 2.0                     | 2.0                          | 36.2                            |
| 37x1.5   | 0.8                        | 1.0                          | 2.0                     | 2.0                          | 37.1                            |
| 41x1.5   | 0.8                        | 1.0                          | 2.0                     | 2.1                          | 39.5                            |

<sup>a</sup> circular stranded conductor (class 2)

**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES**  
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## PVC INSULATED ARMoured CABLES FOR VOLTAGES OF 600/1000V

IEC 60502-1

|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper)                                      |
| Insulation:             | PVC  |
| Inner & outer sheath:   | PVC  |
| Identification of core: | numbering printing on white / black insulation, one is green-yellow. |
| Armouring:              | Aluminium Wire Armour (AWA)  |
|                         | Steel Wire Armour subject to availability                            |

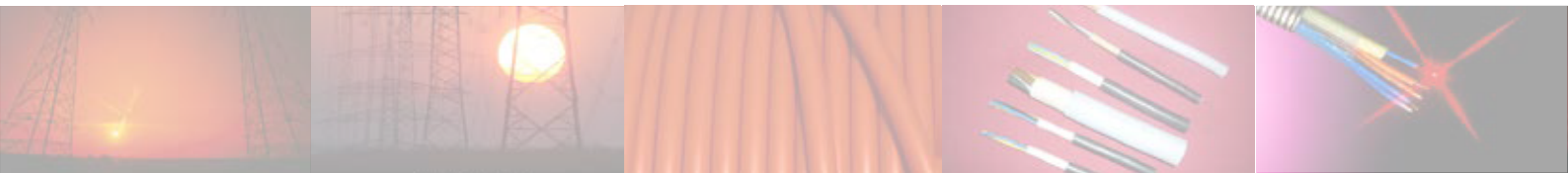
### ARMoured AUXILLARY CABLES

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| No x mm <sup>2</sup>                                   | mm                      | mm                        | mm                   | mm                        | mm                           |
| 48x1.5   | 0.8                     | 1.2                       | 2.0                  | 2.1                       | 41.4                         |
| 7x2.5  | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 24.4                         |
| 10x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 29.0                         |
| 12x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 29.6                         |
| 13x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 30.1                         |
| 14x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 30.5                         |
| 16x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 31.6                         |
| 19x2.5   | 0.8                     | 1.0                       | 2.0                  | 1.8                       | 32.7                         |
| 24x2.5   | 0.8                     | 1.0                       | 2.0                  | 2.0                       | 36.7                         |
| 27x2.5   | 0.8                     | 1.0                       | 2.0                  | 2.0                       | 37.2                         |
| 38x2.5   | 0.8                     | 1.2                       | 2.0                  | 2.2                       | 42.3                         |
| 48x2.5   | 0.8                     | 1.2                       | 2.0                  | 2.3                       | 45.4                         |
| 54x2.5   | 0.8                     | 1.2                       | 2.0                  | 2.3                       | 46.4                         |
| 60x2.5   | 0.8                     | 1.2                       | 2.0                  | 2.4                       | 48.7                         |
| 6 x 4.0  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 28.3                         |
| 7 x 4.0  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 28.3                         |
| 12 x 4.0   | 1.0                     | 1.0                       | 2.0                  | 1.9                       | 33.7                         |
| 6 x 6.0  | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 30.0                         |

<sup>a</sup> a circular stranded conductor (class 2)

**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES**

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**ARMoured ELECTRIC Cables WITH THERMOSETTING INSULATION (XLPE) 600/1000V**  
IEC 60502-1



Conductor: class 2 (annealed plain copper/aluminium)  
Insulation: XLPE  
Inner and outer sheath: PVC  
Identification of core: black/red  
Armouring: Aluminium wire armour

**SINGLE-CORE Cables WITH CIRCULAR STRANDED COPPER/ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor <sup>a</sup> | Thickness of insulation | Thickness of inner sheath | Nominal steel armour wire diameter | Thickness of outer sheath | Approximate overall diameter |
|--|-------------------------|---------------------------|------------------------------------|---------------------------|------------------------------|
| mm <sup>2</sup>  | mm                      | mm                        | mm                                 | mm                        | mm                           |
| 50   | 1.0                     | 1.0                       | 1.7                                | 1.8                       | 24.9                         |
| 70   | 1.1                     | 1.0                       | 1.7                                | 1.8                       | 26.9                         |
| 95   | 1.1                     | 1.0                       | 1.7                                | 1.8                       | 28.8                         |
| 120  | 1.2                     | 1.0                       | 1.7                                | 1.8                       | 30.6                         |
| 150  | 1.4                     | 1.0                       | 1.7                                | 1.8                       | 32.6                         |
| 185  | 1.6                     | 1.0                       | 1.7                                | 1.9                       | 35.0                         |
| 240  | 1.7                     | 1.0                       | 2.0                                | 2.0                       | 38.6                         |
| 300  | 1.8                     | 1.2                       | 2.0                                | 2.1                       | 41.9                         |
| 400  | 2.0                     | 1.2                       | 2.5                                | 2.3                       | 46.7                         |
| 500  | 2.2                     | 1.2                       | 2.5                                | 2.4                       | 50.4                         |
| 630  | 2.4                     | 1.4                       | 2.5                                | 2.6                       | 55.6                         |

<sup>a</sup> circular stranded conductor (class 2).

**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured Cables**  
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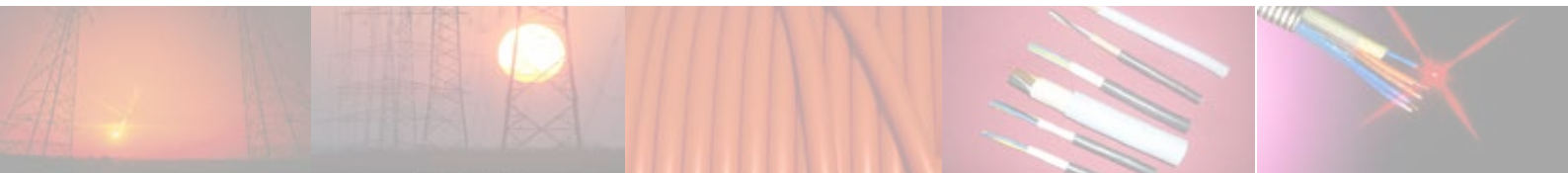
**ARMoured ELECTRIC CABLES WITH THERMOSETTING INSULATION (XLPE) 600/1000V**

IEC 60502-1

|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/aluminium)                                |
| Insulation:             | XLPE   |
| Inner and outer sheath: | PVC  |
| Identification of core: | brown, blue/red, black   |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability |

**TWO-CORE CABLES WITH STRANDED COPPER CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                   | mm                        | mm                           |
| 4   | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 22.5                         |
| 6   | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 23.6                         |
| 10  | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 25.5                         |
| 16  | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 27.6                         |
| 25  | 0.9                     | 1.0                       | 2.0                  | 1.8                       | 31.0                         |
| 35  | 0.9                     | 1.0                       | 2.0                  | 1.9                       | 33.5                         |
| 50  | 1.0                     | 1.0                       | 2.0                  | 2.0                       | 36.8                         |
| 70  | 1.1                     | 1.2                       | 2.0                  | 2.1                       | 41.4                         |
| 95  | 1.1                     | 1.2                       | 2.0                  | 2.3                       | 45.6                         |

Up to 240mm<sup>2</sup>**WE OFFER A REDUCED EARTH CORE FOR BOTH ARMoured AND UNARMoured CABLES****FOR SIZES NOT SHOWN HERE, PLEASE CONTACT - [sales@tropicalcables.com](mailto:sales@tropicalcables.com)**

**ARMoured ELECTRIC CABLES WITH THERMOSETTING INSULATION (XLPE) 600/1000V**  
IEC 60502-1

Conductor:

Insulation:

Inner and outer sheath:

Identification of cores:

Armouring:

class 2 (annealed plain copper/aluminium)

XLPE

PVC

brown, black, grey/ red, yellow, blue

Aluminium Wire Armour (AWA)

Steel Wire Armour subject to availability

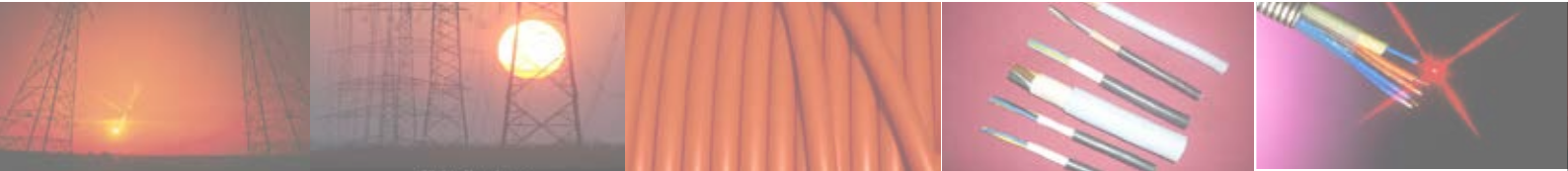


**THREE-CORE CABLES WITH STRANDED COPPER/ ALUMINIUM CONDUCTOR**

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm²                                       | mm                      | mm                        | mm                   | mm                        | mm                           |
| 4 <sup>a</sup>                            | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 23.1                         |
| 6 <sup>a</sup>                            | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 24.4                         |
| 10 <sup>a</sup>                           | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 26.4                         |
| 16 <sup>a</sup>                           | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 28.6                         |
| 25 <sup>b</sup>                           | 0.9                     | 1.0                       | 2.0                  | 1.8                       | 28.7                         |
| 35 <sup>b</sup>                           | 0.9                     | 1.0                       | 2.0                  | 1.8                       | 30.7                         |
| 50 <sup>b</sup>                           | 1.0                     | 1.0                       | 2.0                  | 1.8                       | 32.4                         |
| 70 <sup>b</sup>                           | 1.1                     | 1.0                       | 2.0                  | 2.0                       | 36.9                         |
| 95 <sup>b</sup>                           | 1.1                     | 1.0                       | 2.0                  | 2.1                       | 40.0                         |
| 120 <sup>b</sup>                          | 1.2                     | 1.2                       | 2.0                  | 2.2                       | 43.5                         |
| 150                                       | 1.4                     | 1.2                       | 2.5                  | 2.3                       | 47.8                         |
| 185                                       | 1.6                     | 1.4                       | 2.5                  | 2.5                       | 52.4                         |
| 240                                       | 1.7                     | 1.4                       | 2.5                  | 2.6                       | 57.0                         |

a circular stranded conductor (class 2)  
b sector shaped stranded conductor (class 2)

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## ARMOURED ELECTRIC CABLES WITH THERMOSETTING INSULATION (XLPE) 600/1000V IEC 60502-1

|                         |  |
|-------------------------|--|
| Conductor:              | class 2 (annealed plain copper/aluminium)                                |
| Insulation:             | XLPE   |
| Inner & outer sheath:   | PVC  |
| Identification of core: | blue, brown, black, grey / yellow, blue, black, red                      |
| Armouring:              | Aluminium Wire Armour (AWA)<br>Steel Wire Armour subject to availability |



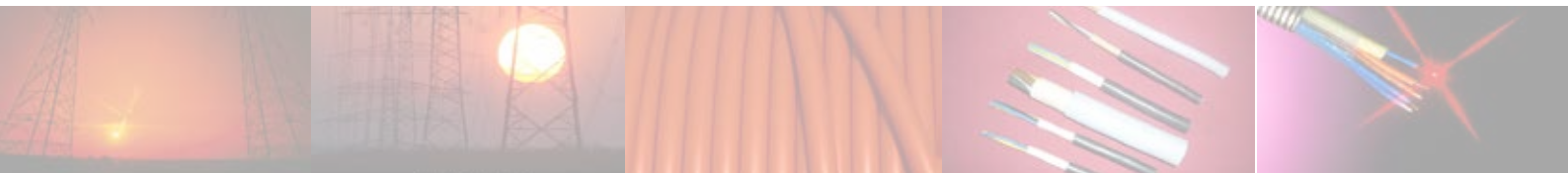
### FOUR - CORE CABLES WITH STRANDED COPPER / ALUMINIUM CONDUCTOR

| Nominal cross sectional area of conductor | Thickness of insulation | Thickness of inner sheath | Nominal AWA diameter | Thickness of outer sheath | Approximate overall diameter |
|---|-------------------------|---------------------------|----------------------|---------------------------|------------------------------|
| mm <sup>2</sup>                           | mm                      | mm                        | mm                   | mm                        | mm                           |
| 4 <sup>a</sup>                            | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 24.2                         |
| 6 <sup>a</sup>                            | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 25.2                         |
| 10 <sup>a</sup>                           | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 27.8                         |
| 16 <sup>a</sup>                           | 0.7                     | 1.0                       | 2.0                  | 1.8                       | 30.3                         |
| 25 <sup>b</sup>                           | 0.9                     | 1.0                       | 2.0                  | 1.8                       | 31.8                         |
| 35 <sup>b</sup>                           | 0.9                     | 1.0                       | 2.0                  | 1.9                       | 34.0                         |
| 50 <sup>b</sup>                           | 1.0                     | 1.0                       | 2.0                  | 2.0                       | 36.9                         |
| 70 <sup>b</sup>                           | 1.1                     | 1.2                       | 2.0                  | 2.1                       | 41.7                         |
| 95 <sup>b</sup>                           | 1.1                     | 1.2                       | 2.0                  | 2.3                       | 45.6                         |
| 120 <sup>b</sup>                          | 1.2                     | 1.2                       | 2.5                  | 2.4                       | 50.3                         |
| 150 <sup>b</sup>                          | 1.4                     | 1.4                       | 2.5                  | 2.6                       | 54.8                         |
| 185 <sup>b</sup>                          | 1.6                     | 1.4                       | 2.5                  | 2.7                       | 59.5                         |
| 240 <sup>b</sup>                          | 1.7                     | 1.6                       | 3.0                  | 3.0                       | 66.9                         |

a circular stranded conductor (class 2)

b sector shaped stranded conductor (class 2)

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**SCREEN CABLES: XLPE INSULATED MULTICORE CONTROL SCREENED CABLES FOR VOLTAGES OF 600/1000V**  
IEC 60502-1

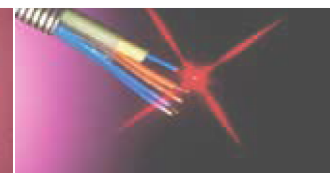
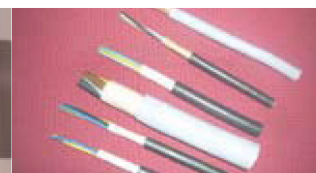
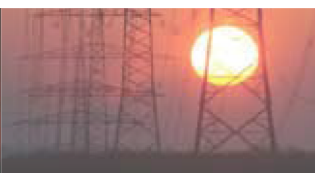
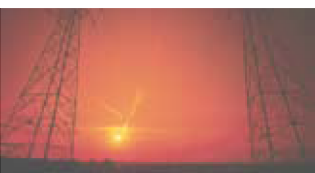
Conductor: Class 2 (annealed plain copper/ aluminium)  
Insulation: XLPE  
Inner & outer sheath: PVC  
Identification of core: 4-core: red, yellow, blue, black  
6, 7, 12, 19 - core : black with number tags



**MULTICORE CABLES WITH CIRCULAR STRANDED COPPER CONDUCTOR**

| Number of cores<br>x cross sectional<br>area of conductor | Thickness of<br>insulation | Thickness of<br>inner sheath | Cu screen<br>thickness | Thickness of<br>outer sheath | Approximate<br>overall diameter |
|---|----------------------------|------------------------------|------------------------|------------------------------|---------------------------------|
| mm <sup>2</sup>   | mm                         | mm                           | mm                     | mm                           | mm                              |
| 7x2.5   | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 26.1                            |
| 12x2.5  | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 30.1                            |
| 19x2.5  | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 32.9                            |
| 4x4   | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 25.4                            |
| 6x4   | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 27.7                            |
| 4x6   | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 26.8                            |
| 6x6   | 0.7                        | 1.0                          | 0.10                   | 1.8                          | 29.4                            |







## NON-SHEATHED CABLES FOR FIXED WIRING



INTEGRITY IS DOING THE RIGHT THING, EVEN IF NOBODY IS WATCHING – JIM STOVALL



# CABLES OF OUR MANUFACTURE

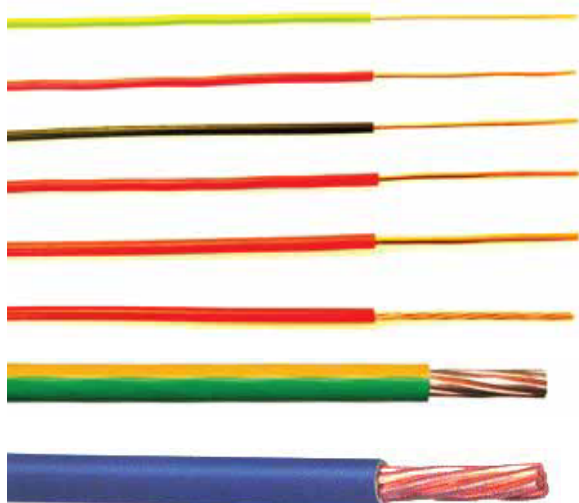
## NON - SHEATHED CABLES FOR FIXED WIRING

GS IEC 60227-3, BS 6004

SINGLE-CORE NON-SHEATHED CABLES WITH RIGID CONDUCTOR FOR GENERAL PURPOSES

SINGLE-CORE NON-SHEATHED CABLE WITH SOLID CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 70°C

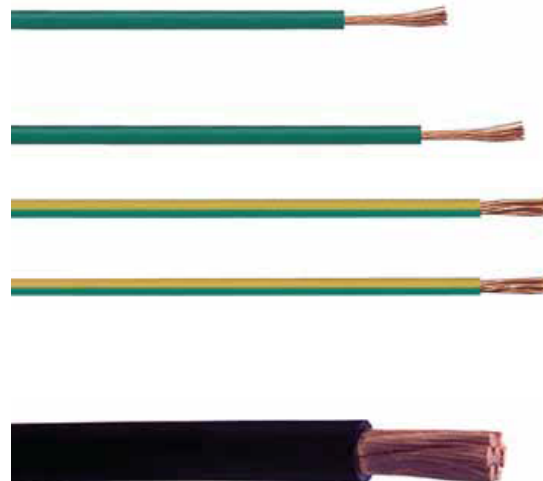
SINGLE-CORE NON-SHEATHED CABLE WITH SOLID CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 90°C



SINGLE-CORE NON-SHEATHED CABLES WITH FLEXIBLE CONDUCTOR GENERAL PURPOSES

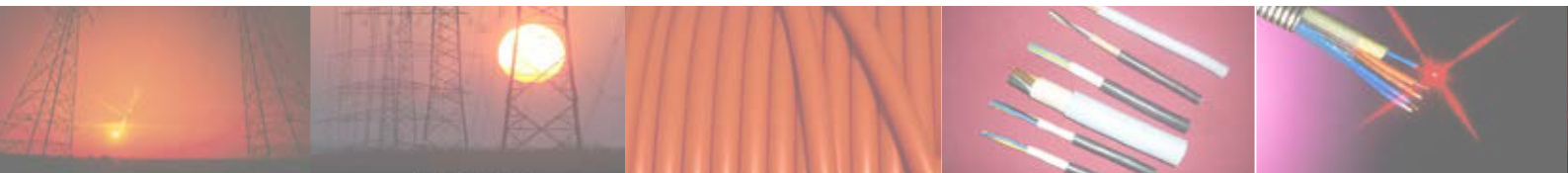
SINGLE-CORE NON-SHEATHED CABLE WITH FLEXIBLE CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 70°C

SINGLE-CORE NON-SHEATHED CABLE WITH FLEXIBLE CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 90°C



### APPLICATION:

INDOOR FIXED INSTALLATION, INTERNAL WIRING





**SINGLE-CORE NON-SHEATHED CABLE WITH RIGID CONDUCTOR FOR GENERAL PURPOSES**

GS IEC 60227-3, BS 6004

Rated Voltage: 450/750V  
 Conductor: Plain annealed copper conductor class 1&2, GS IEC 60228  
 Insulation: PVC  
 Maximum conductor operating temperature in normal use: 70°C



| Nominal cross sectional area of conductor | Class of conductor IEC 60228 | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 70°C | Max. d.c. resistance @20°C |
|---|------------------------------|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                              |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 1.5                                       | 1                            | 0.7                     | 2.6                   | 3.2         | 0.011                                 | 12.10                      |
| 1.5                                       | 2                            | 0.7                     | 2.7                   | 3.3         | 0.010                                 | 12.10                      |
| 2.5                                       | 1                            | 0.8                     | 3.2                   | 3.9         | 0.010                                 | 7.41                       |
| 2.5                                       | 2                            | 0.8                     | 3.3                   | 4           | 0.009                                 | 7.41                       |
| 4   | 1                            | 0.8                     | 3.6                   | 4.4         | 0.0085                                | 4.61                       |
| 4   | 2                            | 0.8                     | 3.8                   | 4.6         | 0.0077                                | 4.61                       |
| 6   | 1                            | 0.8                     | 4.1                   | 5           | 0.007                                 | 3.08                       |
| 6   | 2                            | 0.8                     | 4.3                   | 5.2         | 0.0065                                | 3.08                       |
| 10  | 1                            | 1.0                     | 5.3                   | 6.4         | 0.007                                 | 1.83                       |
| 10  | 2                            | 1.0                     | 5.6                   | 6.7         | 0.0065                                | 1.83                       |
| 16  | 2                            | 1.0                     | 6.4                   | 7.8         | 0.005                                 | 1.15                       |
| 25  | 2                            | 1.2                     | 8.1                   | 9.7         | 0.005                                 | 0.727                      |
| 35  | 2                            | 1.2                     | 9.0                   | 10.9        | 0.0043                                | 0.524                      |
| 50  | 2                            | 1.4                     | 10.6                  | 12.8        | 0.0043                                | 0.387                      |
| 70  | 2                            | 1.4                     | 12.1                  | 14.6        | 0.0035                                | 0.268                      |
| 95  | 2                            | 1.6                     | 14.1                  | 17.1        | 0.0035                                | 0.193                      |
| 120                                       | 2                            | 1.6                     | 15.6                  | 18.8        | 0.0032                                | 0.153                      |
| 150                                       | 2                            | 1.8                     | 17.3                  | 20.9        | 0.0032                                | 0.124                      |
| 185                                       | 2                            | 2.0                     | 19.3                  | 23.3        | 0.0032                                | 0.101                      |
| 240                                       | 2                            | 2.2                     | 22.0                  | 26.6        | 0.0032                                | 0.0775                     |
| 300                                       | 2                            | 2.4                     | 24.5                  | 29.6        | 0.003                                 | 0.0620                     |
| 400                                       | 2                            | 2.6                     | 27.5                  | 33.2        | 0.0028                                | 0.0465                     |



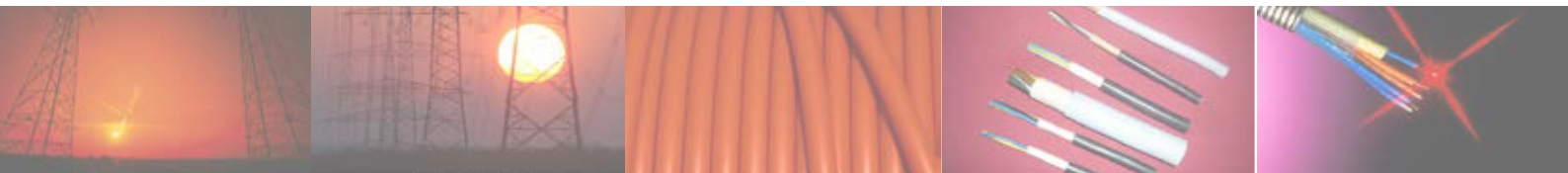
**SINGLE-CORE NON-SHEATHED CABLE WITH FLEXIBLE CONDUCTOR FOR GENERAL PURPOSES**

GS IEC 60227-3, BS 6004

Rated Voltage: 450/750V  
Conductor: annealed plain copper conductor class 5, GS IEC 60228  
Insulation: PVC  
Maximum conductor operating Temperature in normal use: 70°C



| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 70°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 1.5                                       | 0.7                     | 2.8                   | 3.4         | 0.010                                 | 13.3                       |
| 2.5                                       | 0.8                     | 4.1                   | 4.1         | 0.009                                 | 7.98                       |
| 4   | 0.8                     | 4.8                   | 4.8         | 0.007                                 | 4.95                       |
| 6   | 0.8                     | 5.3                   | 5.3         | 0.006                                 | 3.3                        |
| 10  | 1.0                     | 6.8                   | 6.8         | 0.0056                                | 1.91                       |
| 16  | 1.0                     | 8.1                   | 8.1         | 0.0046                                | 1.21                       |
| 25  | 1.2                     | 10.2                  | 10.2        | 0.0044                                | 0.78                       |
| 35  | 1.2                     | 11.7                  | 11.7        | 0.0038                                | 0.554                      |
| 50  | 1.4                     | 13.9                  | 13.9        | 0.0037                                | 0.386                      |
| 70  | 1.4                     | 16                    | 16          | 0.0032                                | 0.272                      |
| 95  | 1.6                     | 18.2                  | 18.2        | 0.0032                                | 0.206                      |
| 120                                       | 1.6                     | 20.2                  | 20.2        | 0.0029                                | 0.161                      |
| 150                                       | 1.8                     | 22.5                  | 22.5        | 0.0029                                | 0.129                      |
| 185                                       | 2.0                     | 24.9                  | 24.9        | 0.0029                                | 0.106                      |
| 240                                       | 2.2                     | 28.4                  | 28.4        | 0.0028                                | 0.0801                     |





### SINGLE-CORE NON-SHEATHED CABLE WITH SOLID CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 70°C

GS IEC 60227-3, BS 6004

Rated Voltage: 300/500V  
 Conductor: plain annealed copper conductor class 1, GS IEC 60228  
 Insulation: PVC  
 Maximum conductor operating Temperature in normal use: 70°C

| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 70°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 0.5                                       | 0.6                     | 1.9                   | 2.3         | 0.015                                 | 36.0                       |
| 0.75                                      | 0.6                     | 2.1                   | 2.5         | 0.012                                 | 24.5                       |
| 1   | 0.6                     | 2.2                   | 2.7         | 0.011                                 | 18.1                       |

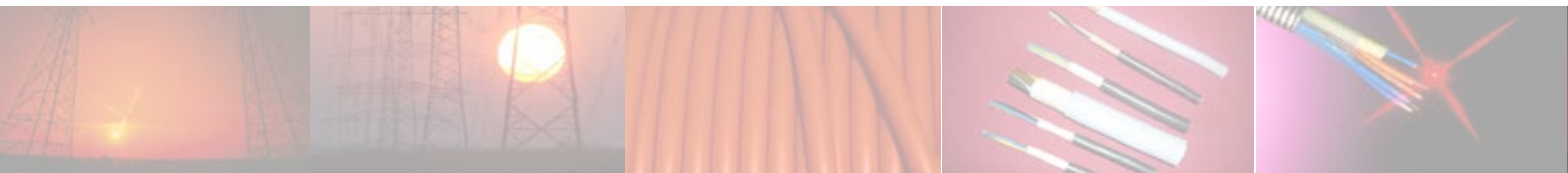
### SINGLE-CORE NON-SHEATHED CABLE WITH FLEXIBLE CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 70°C

GS IEC 60227-3, BS 6004

Rated Voltage: 300/500V  
 Conductor: plain annealed copper conductor class 5, GS IEC 60228  
 Insulation: PVC  
 Maximum conductor operating Temperature in normal use: 70°C

| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 70°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 0.5                                       | 0.6                     | 2.1                   | 2.5         | 0.013                                 | 39.0                       |
| 0.75                                      | 0.6                     | 2.2                   | 2.7         | 0.011                                 | 26.0                       |
| 1   | 0.6                     | 2.4                   | 2.8         | 0.010                                 | 19.5                       |

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**SINGLE-CORE NON-SHEATHED CABLE WITH SOLID CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 90°C**

GS IEC 60227-3, BS 6004

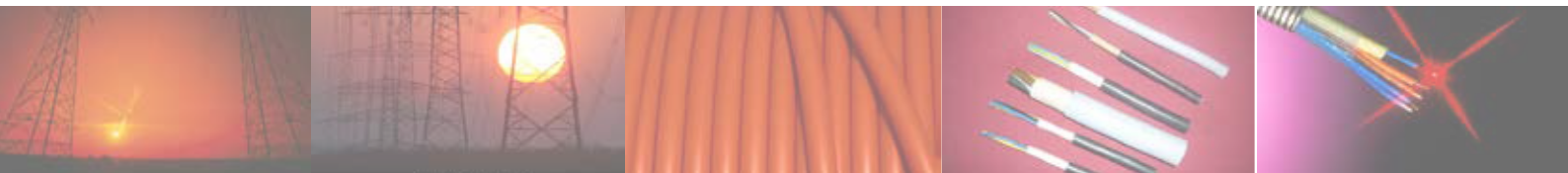
Rated Voltage: 300/500V  
Conductor: annealed plain copper conductor class 1, GS IEC 60228  
Insulation: PVC  
Maximum conductor operating Temperature in normal use: 90°C

| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 90°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 0.5                                       | 0.6                     | 1.9                   | 2.3         | 0.015                                 | 36.0                       |
| 0.75                                      | 0.6                     | 2.1                   | 2.5         | 0.012                                 | 24.5                       |
| 1   | 0.6                     | 2.2                   | 2.7         | 0.011                                 | 18.1                       |
| 1.5                                       | 0.7                     | 2.6                   | 3.2         | 0.011                                 | 12.1                       |
| 2.5                                       | 0.8                     | 3.2                   | 3.9         | 0.009                                 | 7.4                        |
|   |                         |                       |             |                                       |                            |

**SINGLE-CORE NON-SHEATHED CABLE WITH FLEXIBLE CONDUCTOR FOR INTERNAL WIRING FOR A CONDUCTOR TEMPERATURE OF 90°C**

Rated Voltage: 300/500V  
Conductor: plain annealed copper conductor class 5, GS IEC 60228  
Insulation: PVC  
Maximum conductor operating Temperature in normal use: 90°C

| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |             | Minimum Insulation resistance at 90°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|-------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm          | MΩ/km                                 | Ω/km                       |
| 0.5                                       | 0.6                     | 2.1                   | 2.5         | 0.013                                 | 39.0                       |
| 0.75                                      | 0.6                     | 2.2                   | 2.7         | 0.012                                 | 26.0                       |
| 1   | 0.6                     | 2.4                   | 2.8         | 0.010                                 | 19.5                       |
| 1.5                                       | 0.7                     | 2.8                   | 3.4         | 0.009                                 | 13.3                       |
| 2.5                                       | 0.8                     | 3.4                   | 4.1         | 0.009                                 | 8.0                        |



## **SHEATHED CABLES FOR FIXED WIRING & FLEXIBLE CABLES**



**TO IMPROVE IS TO CHANGE, TO BE PERFECT IS TO CHANGE MORE OFTEN - WINSTON CHURCHILL**



# CABLES OF OUR MANUFACTURE

## **SHEATHED CABLES FOR FIXED WIRING**

GS IEC 60227-4, BS 6004

LIGHT POLYVINYL CHLORIDE SHEATHED CABLE



### **APPLICATION:**

INDOOR AND OUTDOOR FXED INSTALLATIONS

## **FLEXIBLE CABLES (CORDS)**

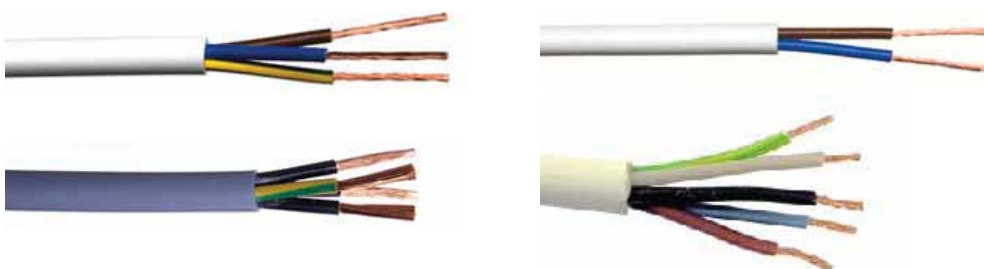
GS IEC 60227-5, BS 6500

LIGHT POLYVINYL CHLORIDE SHEATHED CORD

ORDINARY POLYVINYL CHLORIDE SHEATHED CORD

HEAT RESISTANT LIGHT PVC-SHEATHED CORD FOR A MAXIMUM CONDUCTOR TEMPERATURE OF 90 °C

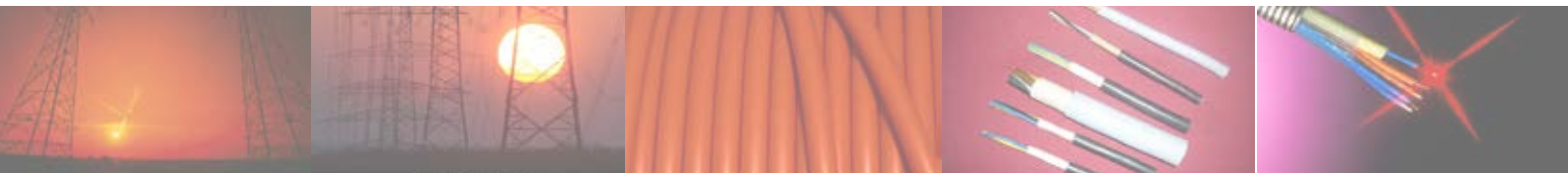
HEAT RESISTANT ORDINARY PVC-SHEATHED CORD FOR A MAXIMUM CONDUCTOR TEMPERATURE OF 90 °C



### **APPLICATION:**

DOMESTIC AND OFFICE INSTALLATIONS, EXTENSION CORDS

LIGHT DUTY INTERNAL WIRING FOR SMALL APPLIANCES, AIRCONDITIONERS





**PVC INSULATED PVC SHEATHED CABLE FLAT TWIN VOLTAGES OF 300/500V**  
BS 6004

Conductor: Class 2 (annealed plain copper / aluminium)  
Insulation: PVC  
Sheath: PVC  
Indentification of core: brown, blue / red, black



| Number and Nominal cross-sectional area of conductors | Radial thickness of insulation | Radial thickness of sheath | Approximate overall dimensions |
|---|--------------------------------|----------------------------|--------------------------------|
| mm <sup>2</sup>                                       | mm                             | mm                         | mm                             |
| 2x1.5   | 0.6                            | 0.90                       | 4.7 x 7.4                      |
| 2x1.5   | 0.7                            | 0.90                       | 5.4 x 8.4                      |
| 2x2.5   | 0.8                            | 1.0                        | 6.2 x 9.8                      |
| 2x4   | 0.8                            | 1.0                        | 7.2 x 11.5                     |
| 2x6   | 0.8                            | 1.1                        | 8.0 x 13.0                     |



**LIGHT POLYVINYL CHLORIDE SHEATHED CABLE**

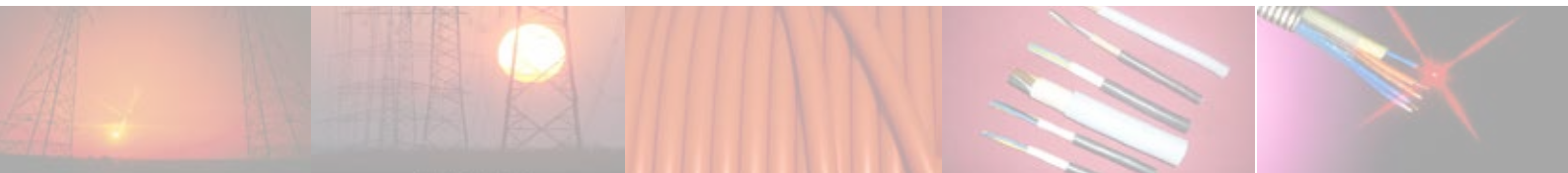
GS IEC 60227-4, BS 6004



Rated Voltage: 300/500V  
 Conductor: annealed plain copper conductor class 1&2, GS IEC 60228  
 Insulation: PVC  
 Sheath: PVC  
 Maximum conductor operating Temperature in normal use: 70°C

| Number and Nominal cross-sectional area of conductors | Class of conductor<br>IEC 60228 | Insulation Thickness<br>Specified value | Thickness of inner covering<br>Approximate value | Thickness of sheath<br>Specified value | Mean overall diameter |             | Minimum Insulation resistance at 70°C |
|---|---------------------------------|---|--|--|-----------------------|-------------|---------------------------------------|
|   |                                 |   |  |  | Lower limit           | Upper limit |                                       |
| mm <sup>2</sup>                                       |                                 | mm                                      | mm   | mm                                     | mm                    | mm          | MΩ/km                                 |
| 1x1.5   | 1                               | 0.7                                     |  | 0.8                                    | 4.2                   | 4.8         | 0.011                                 |
| 1x1.5   | 2                               | 0.7                                     |  | 0.8                                    | 4.3                   | 4.9         | 0.010                                 |
| 1x2.5   | 1                               | 0.8                                     |  | 0.8                                    | 4.8                   | 5.5         | 0.010                                 |
| 1x2.5   | 2                               | 0.8                                     |  | 0.8                                    | 4.9                   | 5.6         | 0.009                                 |
| 1x4   | 1                               | 0.8                                     |  | 0.9                                    | 5.4                   | 6.2         | 0.085                                 |
| 1x4   | 2                               | 0.8                                     |  | 0.9                                    | 5.6                   | 6.4         | 0.0077                                |
| 1x6   | 1                               | 0.8                                     |  | 0.9                                    | 5.9                   | 6.8         | 0.007                                 |
| 1x6   | 2                               | 0.8                                     |  | 0.9                                    | 6.1                   | 7           | 0.0065                                |
| 1x10  | 2                               | 1.0                                     |  | 0.9                                    | 7.4                   | 8.5         | 0.0052                                |
| 1x16  | 2                               | 1.0                                     |  | 1.0                                    | 8.4                   | 9.8         | 0.005                                 |
| 1x25  | 2                               | 1.2                                     |  | 1.1                                    | 10.3                  | 11.9        | 0.005                                 |
| 1x35  | 2                               | 1.2                                     |  | 1.1                                    | 11.2                  | 13.1        | 0.0044                                |

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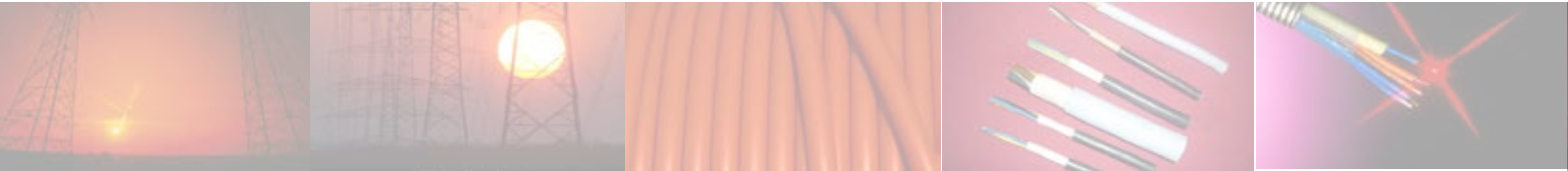


**LIGHT POLYVINYL CHLORIDE SHEATHED CABLE**  
GS IEC 60227 - 4, BS 6004 (CONT'D)



| Number and Nominal cross-sectional area of conductors | Class of conductor<br><br>IEC 60228 | Insulation Thickness<br><br>Specified value | Thickness of inner covering<br><br>Approximate value | Thickness of sheath<br><br>Specified value | Mean overall diameter |             | Minimum Insulation resistance at 70°C |
|---|-------------------------------------|---|--|--|-----------------------|-------------|---------------------------------------|
|   |                                     |   |  |  | Lower limit           | Upper limit |                                       |
| mm <sup>2</sup>                                       |                                     | mm  | mm   | mm   | mm                    | mm          | MΩ/km                                 |
| 2x1.5   | 1                                   | 0.7   | 0.4  | 1.2  | 7.6                   | 10          | 0.011                                 |
| 2x1.5   | 2                                   | 0.7   | 0.4  | 1.2  | 7.8                   | 10.5        | 0.010                                 |
| 2x1.5   | 1                                   | 0.8   | 0.4  | 1.2  | 8.6                   | 11.5        | 0.010                                 |
| 2x2.5   | 2                                   | 0.8   | 0.4  | 1.2  | 9.0                   | 12          | 0.009                                 |
| 2x4   | 1                                   | 0.8   | 0.4  | 1.2  | 9.6                   | 12.5        | 0.0085                                |
| 2x4   | 2                                   | 0.8   | 0.4  | 1.2  | 10.0                  | 13          | 0.0077                                |
| 2x6   | 1                                   | 0.8   | 0.4  | 1.2  | 10.5                  | 13.5        | 0.007                                 |
| 2x6   | 2                                   | 0.8   | 0.4  | 1.2  | 11.0                  | 14          | 0.0065                                |
| 2x10  | 1                                   | 1.0   | 0.6  | 1.4  | 13.0                  | 16.5        | 0.007                                 |
| 2x10  | 2                                   | 1.0   | 0.6  | 1.4  | 13.5                  | 17.5        | 0.0065                                |
| 2x16  | 2                                   | 1.0   | 0.6  | 1.4  | 15.5                  | 20          | 0.0052                                |
| 2x25  | 2                                   | 1.2   | 0.8  | 1.4  | 18.5                  | 24          | 0.005                                 |
| 2x35  | 2                                   | 1.2   | 1.0  | 1.6  | 21.0                  | 27.5        | 0.0044                                |

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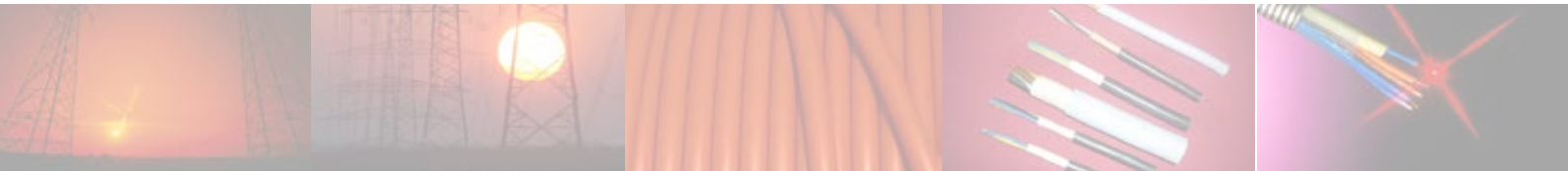


**LIGHT POLYVINYL CHLORIDE SHEATHED CABLE**

GS IEC 60227 - 4, BS 6004 (CONT'D)



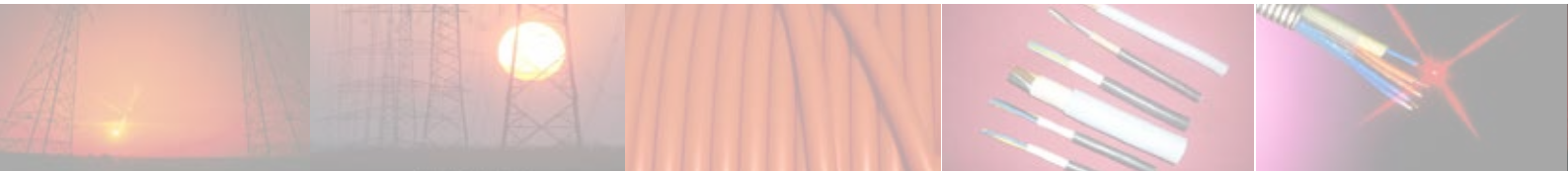
| Number and Nominal cross-sectional area of conductors | Class of conductor<br>IEC 60228 | Insulation Thickness<br>Specified value | Thickness of inner covering<br>Approximate value | Thickness of sheath<br>Specified value | Mean overall diameter |             | Minimum Insulation resistance at 70°C |
|---|---------------------------------|---|--|--|-----------------------|-------------|---------------------------------------|
|   |                                 |   |  |  | Lower limit           | Upper limit |                                       |
| mm <sup>2</sup>                                       |                                 | mm                                      | mm   | mm                                     | mm                    | mm          | MΩ/km                                 |
| 3x1.5   | 1                               | 0.7                                     | 0.4  | 1.2                                    | 8                     | 10.5        | 0.011                                 |
| 3x1.5   | 2                               | 0.7                                     | 0.4  | 1.2                                    | 8.2                   | 11          | 0.010                                 |
| 3x2.5   | 1                               | 0.8                                     | 0.4  | 1.2                                    | 9.2                   | 12          | 0.010                                 |
| 3x2.5   | 2                               | 0.8                                     | 0.4  | 1.2                                    | 9.4                   | 12.5        | 0.0090                                |
| 3x4   | 1                               | 0.8                                     | 0.4  | 1.2                                    | 10                    | 13          | 0.0085                                |
| 3x4   | 2                               | 0.8                                     | 0.4  | 1.2                                    | 10.5                  | 13.5        | 0.0077                                |
| 3x6   | 1                               | 0.8                                     | 0.4  | 1.4                                    | 11.5                  | 14.5        | 0.0070                                |
| 3x6   | 2                               | 0.8                                     | 0.4  | 1.4                                    | 12.0                  | 15.5        | 0.0065                                |
| 3x10  | 1                               | 1.0                                     | 0.6  | 1.4                                    | 14.0                  | 17.5        | 0.0070                                |
| 3x10  | 2                               | 1.0                                     | 0.6  | 1.4                                    | 14.5                  | 19.0        | 0.0065                                |
| 3x16  | 2                               | 1.0                                     | 0.8  | 1.4                                    | 16.5                  | 21.5        | 0.0052                                |
| 3x25  | 2                               | 1.2                                     | 0.8  | 1.6                                    | 20.5                  | 26.0        | 0.0050                                |
| 3x35  | 2                               | 1.2                                     | 1.0  | 1.6                                    | 22.0                  | 29.0        | 0.0044                                |

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**LIGHT POLYVINYL CHLORIDE SHEATHED CABLE**

GS IEC 60227 - 4, BS 6004 (CONT'D)

| Number and Nominal cross-sectional area of conductors | Class of conductor<br>IEC 60228 | Insulation Thickness<br>Specified value | Thickness of inner covering<br>Approximate value | Thickness of sheath<br>Specified value | Mean overall diameter |             | Minimum Insulation resistance at 70°C |
|---|---------------------------------|---|--|--|-----------------------|-------------|---------------------------------------|
|   |                                 |   |  |  | Lower limit           | Upper limit |                                       |
| mm <sup>2</sup>                                       |                                 | mm                                      | mm   | mm                                     | mm                    | mm          | MΩ/km                                 |
| 4x1.5   | 1                               | 0.7                                     | 0.4  | 1.2                                    | 8.6                   | 11.5        | 0.011                                 |
| 4x1.5   | 2                               | 0.7                                     | 0.4  | 1.2                                    | 9                     | 12          | 0.010                                 |
| 4x2.5   | 1                               | 0.8                                     | 0.4  | 1.2                                    | 10.0                  | 13.0        | 0.010                                 |
| 4x2.5   | 2                               | 0.8                                     | 0.4  | 1.2                                    | 10.0                  | 13.5        | 0.0090                                |
| 4x4   | 1                               | 0.8                                     | 0.4  | 1.4                                    | 11.5                  | 14.5        | 0.0085                                |
| 4x4   | 2                               | 0.8                                     | 0.4  | 1.4                                    | 12.0                  | 15.0        | 0.0077                                |
| 4x6   | 1                               | 0.8                                     | 0.6  | 1.4                                    | 12.5                  | 16.0        | 0.0070                                |
| 4x6   | 2                               | 0.8                                     | 0.6  | 1.4                                    | 13.0                  | 17.0        | 0.0065                                |
| 4x10  | 1                               | 1.0                                     | 0.6  | 1.4                                    | 15.5                  | 19.0        | 0.0070                                |
| 4x10  | 2                               | 1.0                                     | 0.6  | 1.4                                    | 16.0                  | 20.5        | 0.0065                                |
| 4x16  | 2                               | 1.0                                     | 0.8  | 1.4                                    | 18.0                  | 23.5        | 0.0052                                |
| 4x25  | 2                               | 1.2                                     | 1.0  | 1.6                                    | 22.5                  | 28.5        | 0.0050                                |
| 4x35  | 2                               | 1.2                                     | 1.0  | 1.6                                    | 24.5                  | 32.0        | 0.0044                                |

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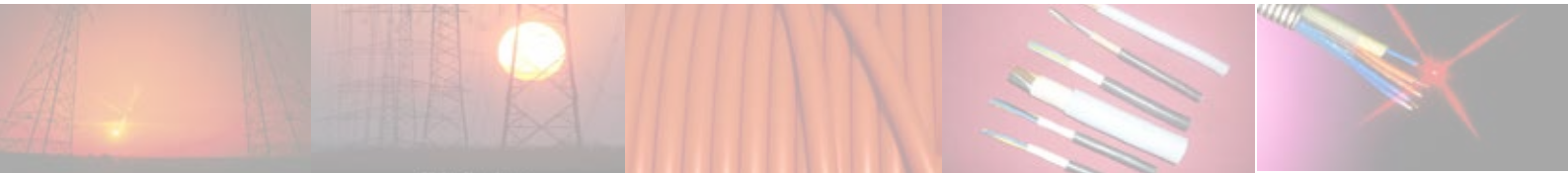
## LIGHT POLYVINYL CHLORIDE SHEATHED CABLE

GS IEC 60227 - 4, BS 6004 (CONT'D)



| Number and Nominal cross-sectional area of conductors | Class of conductor<br>IEC 60228 | Insulation Thickness<br>Specified value | Thickness of inner covering<br>Approximate value | Thickness of sheath<br>Specified value | Mean overall diameter |             | Minimum Insulation resistance at 70°C |
|---|---------------------------------|---|--|--|-----------------------|-------------|---------------------------------------|
|   |                                 |   |  |  | Lower limit           | Upper limit |                                       |
| mm <sup>2</sup>                                       |                                 | mm                                      | mm   | mm                                     | mm                    | mm          | MΩ/km                                 |
| 5x1.5   | 1                               | 0.7                                     | 0.4  | 1.2                                    | 9.4                   | 12.0        | 0.011                                 |
| 5x1.5   | 2                               | 0.7                                     | 0.4  | 1.2                                    | 9.8                   | 12.5        | 0.010                                 |
| 5x2.5   | 1                               | 0.8                                     | 0.4  | 1.2                                    | 11.0                  | 14.0        | 0.010                                 |
| 5x2.5   | 2                               | 0.8                                     | 0.4  | 1.2                                    | 11.0                  | 14.5        | 0.009                                 |
| 5x4   | 1                               | 0.8                                     | 0.6  | 1.4                                    | 12.5                  | 16.0        | 0.0085                                |
| 5x4   | 2                               | 0.8                                     | 0.6  | 1.4                                    | 13.0                  | 17.0        | 0.0077                                |
| 5x6   | 1                               | 0.8                                     | 0.6  | 1.4                                    | 13.5                  | 17.5        | 0.0070                                |
| 5x6   | 2                               | 0.8                                     | 0.6  | 1.4                                    | 14.5                  | 18.5        | 0.0065                                |
| 5x10  | 1                               | 1.0                                     | 0.6  | 1.4                                    | 17.0                  | 21.0        | 0.0070                                |
| 5x10  | 2                               | 1.0                                     | 0.6  | 1.4                                    | 17.5                  | 22.0        | 0.0065                                |
| 5x16  | 2                               | 1.0                                     | 0.8  | 1.6                                    | 20.5                  | 26.0        | 0.0052                                |
| 5x25  | 2                               | 1.2                                     | 1.0  | 1.6                                    | 24.5                  | 31.5        | 0.0050                                |
| 5x35  | 2                               | 1.2                                     | 1.2  | 1.6                                    | 27.0                  | 35.0        | 0.0044                                |

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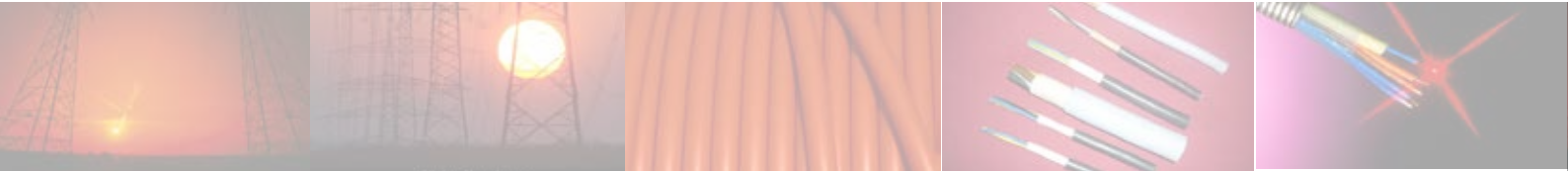
**LIGHT POLYVINYL CHLORIDE SHEATHED CORD**

GS IEC 60227-5, BS 6500

Rated Voltage: 300/300V  
Conductor: annealed plain copper conductor class 5, GS IEC 60228  
Insulation: PVC  
Sheath: PVC  
Maximum conductor operating Temperature in normal use: 70°C

| Nominal cross sectional area of conductor | Thickness of insulation | Mean overall diameter |                | Minimum Insulation resistance at 70°C | Max. d.c. resistance @20°C |
|---|-------------------------|-----------------------|----------------|---------------------------------------|----------------------------|
|   |                         | Lower limit           | Upper limit    |                                       |                            |
| mm <sup>2</sup>                           | mm                      | mm                    | mm             | MΩ/km                                 | Ω/km                       |
| 2x0.5                                     | 0.5                     | 0.6                   | 4.6 or 3x4.9   | 5.9 or 3.7x5.9                        | 0.012                      |
| 2x0.75                                    | 0.5                     | 0.6                   | 4.9 or 3.2x5.2 | 6.3 or 3.8x6.3                        | 0.010                      |
| 3x0.5                                     | 0.5                     | 0.6                   | 4.9            | 6.3                                   | 0.012                      |
| 3x0.75                                    | 0.5                     | 0.6                   | 5.2            | 6.7                                   | 0.010                      |

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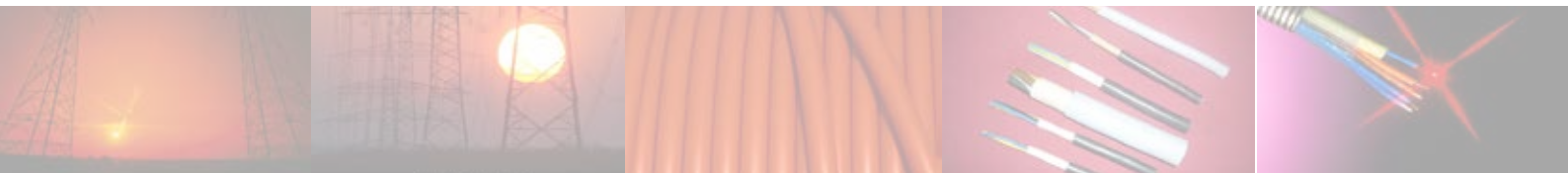


**ORDINARY POLYVINYL CHLORIDE SHEATHED CORD 300/500V**

GS IEC 60227- 5, BS 6500

Rated Voltage: 300/500V  
Conductor: annealed plain copper conductor class 5, GS IEC 60228  
Insulation: PVC  
Sheath: PVC  
Maximum conductor operating temperature in normal use: 70°C

| Number and Nominal cross-sectional area of conductors | Thickness of insulation<br>Specified value | Thickness of sheath<br>Specified value | Mean overall dimensions |                | Minimum insulation resistance at 90°C |
|---|--|--|-------------------------|----------------|---------------------------------------|
|   |  |  | Lower limit             | Upper limit    |                                       |
| mm <sup>2</sup>                                       | mm   | mm                                     | mm                      | mm             | MΩ/km                                 |
| 2 X 0.75  | 0.6  | 0.8                                    | 5.7 or 3.7x6.0          | 7.2 or 4.5x7.2 | 0.011                                 |
| 2 X 1   | 0.6  | 0.8                                    | 5.9 or 3.9x6.2          | 7.5 or 4.7x7.5 | 0.010                                 |
| 2 X 1.5   | 0.7  | 0.8                                    | 6.8                     | 8.6            | 0.010                                 |
| 2 X 2.5   | 0.8  | 1.0                                    | 8.4                     | 10.6           | 0.009                                 |
| 3 X 0.75  | 0.6  | 0.8                                    | 6.0                     | 7.6            | 0.011                                 |
| 3 X 1   | 0.6  | 0.8                                    | 6.3                     | 8.0            | 0.010                                 |
| 3 X 1.5   | 0.7  | 0.9                                    | 7.4                     | 9.4            | 0.010                                 |
| 3 X 2.5   | 0.8  | 1.1                                    | 9.2                     | 11.4           | 0.009                                 |
| 4 X 0.75  | 0.6  | 0.8                                    | 6.6                     | 8.3            | 0.011                                 |
| 4 X 1   | 0.6  | 0.9                                    | 7.1                     | 9.0            | 0.010                                 |
| 4 X 1.5   | 0.7  | 1                                      | 8.4                     | 10.5           | 0.010                                 |
| 4 X 2.5   | 0.8  | 1.1                                    | 10.1                    | 12.5           | 0.009                                 |
| 5 X 0.75  | 0.6  | 0.9                                    | 7.4                     | 9.3            | 0.011                                 |
| 5 X 1   | 0.6  | 0.9                                    | 7.8                     | 9.8            | 0.010                                 |
| 5 X 1.5   | 0.7  | 1.1                                    | 9.3                     | 11.6           | 0.010                                 |
| 5 X 2.5   | 0.8  | 1.2                                    | 11.2                    | 13.9           | 0.009                                 |
|   |  |  |                         |                |                                       |

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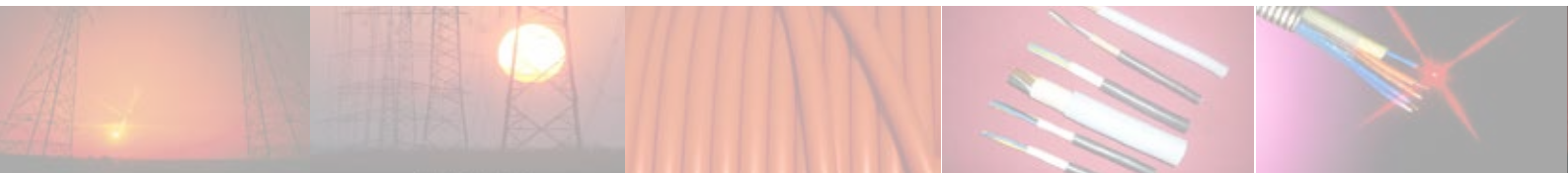
## HEAT RESISTANT LIGHT PVC-SHEATHED CORD FOR A MAXIMUM CONDUCTOR TEMPERATURE OF 90°C

GS IEC 60227-5, BS 6500

Rated Voltage: 300/300V  
 Conductor: annealed plain copper conductor class 5, GS IEC 60228  
 Insulation: PVC  
 Sheath: PVC  
 Maximum conductor operating Temperature in normal use: 90°C

| Nominal cross sectional area of conductor | Thickness of insulation<br>Specified value | Thickness of sheath<br>Specified value | Mean overall diameter |                | Minimum insulation resistance at 90°C |
|---|--|--|-----------------------|----------------|---------------------------------------|
|   |  |  | Lower limit           | Upper limit    |                                       |
| mm <sup>2</sup>                           | mm   | mm                                     | mm                    | mm             | MΩ/km                                 |
| 2x0.5                                     | 0.5  | 0.6                                    | 4.6 or 3x4.9          | 5.9 or 3.7x5.9 | 0.012                                 |
| 2x0.75                                    | 0.5  | 0.6                                    | 4.6 or 3.2x5.2        | 6.3 or 3.8x6.3 | 0.010                                 |
| 3x0.5                                     | 0.5  | 0.6                                    | 4.9                   | 6.3            | 0.012                                 |
| 3x0.75                                    | 0.5  | 0.6                                    | 5.2                   | 6.7            | 0.010                                 |
| 3x1                                       | 0.6  | 0.8                                    | 6.3                   | 8.0            | 0.010                                 |
| 3x0.15                                    | 0.7  | 0.9                                    | 7.4                   | 9.4            | 0.010                                 |
| 3x0.25                                    | 0.8  | 1.1                                    | 9.2                   | 11.4           | 0.009                                 |
| 4x0.75                                    | 0.6  | 0.8                                    | 6.6                   | 8.3            | 0.011                                 |
| 4x1                                       | 0.6  | 0.9                                    | 7.1                   | 9.0            | 0.010                                 |
| 4x1.5                                     | 0.7  | 1.0                                    | 8.4                   | 10.5           | 0.010                                 |
| 4x2.5                                     | 0.8  | 1.1                                    | 10.1                  | 12.5           | 0.009                                 |
| 4x0.75                                    | 0.6  | 0.9                                    | 7.4                   | 9.3            | 0.011                                 |
| 5x1                                       | 0.6  | 0.9                                    | 7.8                   | 9.8            | 0.010                                 |
| 5x1.5                                     | 0.7  | 1.1                                    | 9.3                   | 11.6           | 0.010                                 |
| 5x2.5                                     | 0.8  | 1.2                                    | 11.2                  | 13.9           | 0.009                                 |

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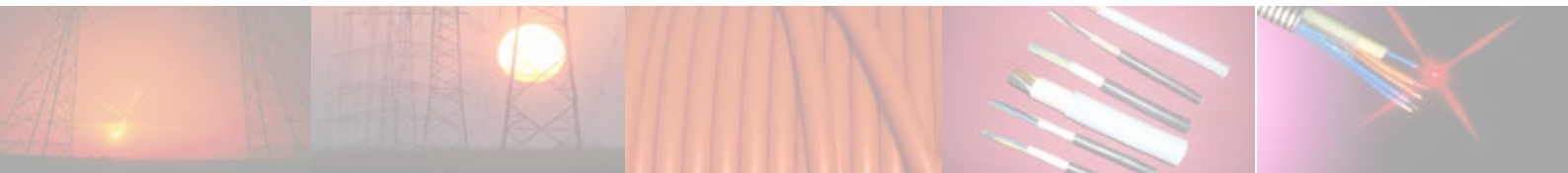


**HEAT RESISTANT LIGHT PVC-SHEATHED CORD FOR A MAXIMUM CONDUCTOR TEMPERATURE OF 90°C**

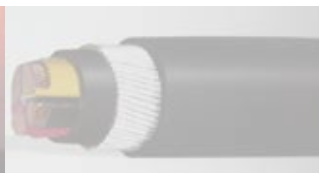
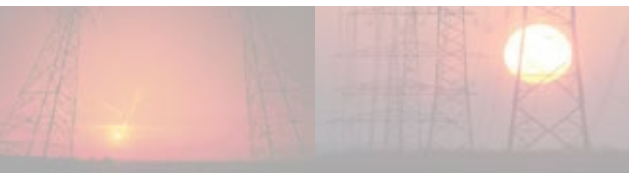
GS IEC 60227-5, BS 6500

Rated Voltage: 300/500V  
Conductor: annealed plain copper conductor class 5, GS IEC 60228  
Insulation: PVC  
Sheath: PVC  
Maximum conductor operating  
Temperature in normal use: 90°C

| Nominal cross sectional area of conductor | Thickness of insulation<br>Specified value | Thickness of sheath<br>Specified value | Mean overall diameter |                 | Minimum insulation resistance at 90°C |
|---|--|--|-----------------------|-----------------|---------------------------------------|
|   |  |  | Lower limit           | Upper limit     |                                       |
| mm <sup>2</sup>                           | mm   | mm                                     | mm                    | mm              | MΩ/km                                 |
| 2x0.75                                    | 0.6  | 0.8                                    | 5.7 or 3.7x6.0        | 7.2 or 4.5x 7.2 | 0.011                                 |
| 2x1                                       | 0.6  | 0.8                                    | 5.9 or 3.9x6.2        | 7.5 or 4.7x 7.5 | 0.010                                 |
| 2x1.5                                     | 0.7  | 0.8                                    | 6.8                   | 8.6             | 0.010                                 |
| 2x2.5                                     | 0.8  | 1.0                                    | 8.4                   | 10.6            | 0.009                                 |
| 3x0.75                                    | 0.6  | 0.8                                    | 6.0                   | 7.6             | 0.011                                 |
| 3x1                                       | 0.6  | 0.8                                    | 6.3                   | 8.0             | 0.010                                 |
| 3x1.5                                     | 0.7  | 0.9                                    | 7.4                   | 9.4             | 0.010                                 |
| 3x2.5                                     | 0.8  | 1.1                                    | 9.2                   | 11.4            | 0.009                                 |
| 4x0.75                                    | 0.6  | 0.8                                    | 6.6                   | 8.3             | 0.011                                 |
| 4x1                                       | 0.6  | 0.9                                    | 7.1                   | 9.0             | 0.010                                 |
| 4x1.5                                     | 0.7  | 1.0                                    | 8.4                   | 10.5            | 0.010                                 |
| 4x2.5                                     | 0.8  | 1.1                                    | 10.1                  | 12.5            | 0.009                                 |
| 5x0.75                                    | 0.6  | 0.9                                    | 7.4                   | 9.3             | 0.011                                 |
| 5x1                                       | 0.6  | 0.9                                    | 7.8                   | 9.8             | 0.010                                 |
| 5x1.5                                     | 0.7  | 1.1                                    | 9.3                   | 11.6            | 0.010                                 |
| 5x2.5                                     | 0.8  | 1.2                                    | 11.2                  | 13.9            | 0.009                                 |
|   |  |  |                       |                 |                                       |

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## TELECOMMUNICATION CABLES



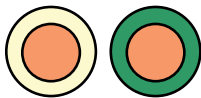
THE SECRET TO SUCCESS IS TO DO THE COMMON THINGS UNCOMMONLY WELL  
JOHN D. ROCKEFELLER, JR.

# CABLES OF OUR MANUFACTURE

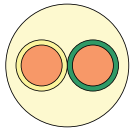
## TELECOMMUNICATION CABLES



Drop wire



1-pair Jumper wire



Internal PVC wire

### APPLICATION:

EXTERNAL TELEPHONE WIRING.

INTERCONNECTION OF CIRCUIT, CROSS CONNECTION OF CABINETS AND BUILDING DISTRIBUTION FRAMES.

INTERCONNECTION OF TERMINATION POINT OF INTERNAL DISTRIBUTION POINT TO ROSETTE OF SUBSCRIBERS TELECOM APPARATUS





# TELECOMMUNICATION CABLES



## TELEPHONE DROP WIRE

| Diameter of wire | Thickness of insulation | Major / Minor axis approx. | Max Loop Resistance | Min Insulation Resistance  | Min. Tensile Force |
|------------------|-------------------------|----------------------------|---------------------|----------------------------|--------------------|
| mm               | mm                      | mm                         | $\Omega/\text{km}$  | $\text{M}\Omega/\text{km}$ | N                  |
| 1.00             | 1.00                    | 6.00/3.00                  | 71                  | 100                        | 500                |



## JUMPER WIRE

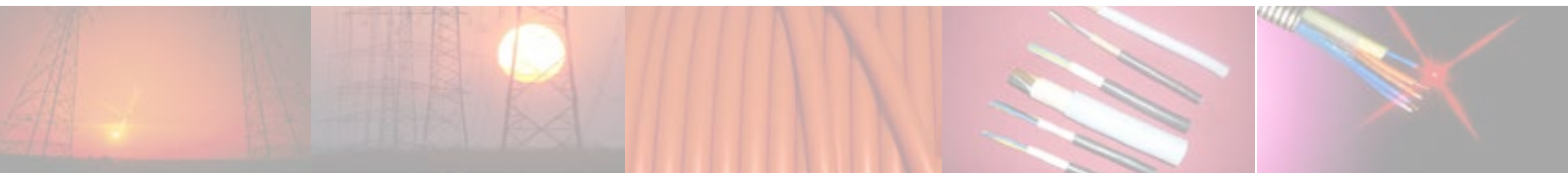
| Diameter of wire | Thickness of insulation | Major / Minor axis approx. | Max Loop Resistance | Min Insulation Resistance  |
|------------------|-------------------------|----------------------------|---------------------|----------------------------|
| mm               | mm                      | mm                         | $\Omega/\text{km}$  | $\text{M}\Omega/\text{km}$ |
| 0.5              | 0.4                     | 1.3                        | 200                 | 200                        |



## INTERNAL PVC WIRE

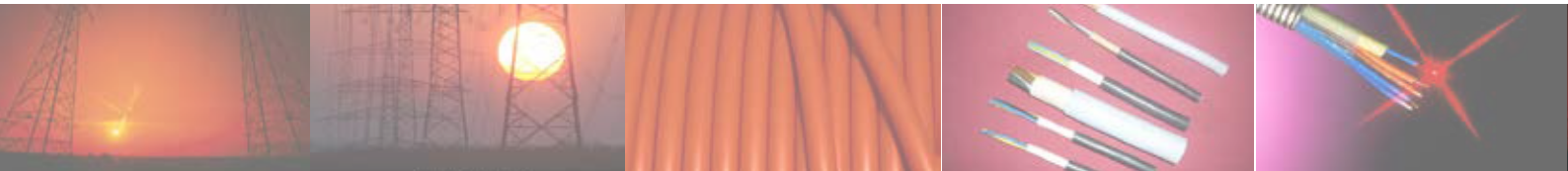
| Diameter of wire | Thickness of insulation | Thickness of Sheath | Max D.C. Resistance | Min Insulation Resistance  | Min. Elongation at fracture |
|------------------|-------------------------|---------------------|---------------------|----------------------------|-----------------------------|
| mm               | mm                      | mm                  | $\Omega/\text{km}$  | $\text{M}\Omega/\text{km}$ | %                           |
| 0.65             | 0.4                     | 1.00                | 56.5                | 50                         | 18                          |

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## ABBREVIATIONS

|             |   |  |
|-------------|---|--|
| <b>AAAC</b> | - | ALL ALUMINIUM ALLOY CONDUCTOR                  |
| <b>AAC</b>  | - | ALL ALUMINIUM CONDUCTOR                        |
| <b>ACSR</b> | - | ALUMINIUM CONDUCTOR STEEL REINFORCED           |
| <b>BS</b>   | - | BRITISH STANDARD                               |
| <b>COHL</b> | - | COPPER OVERHEAD LINE CONDUCTOR                 |
| <b>ECG</b>  | - | ELECTRICITY COMPANY OF GHANA                   |
| <b>HV</b>   | - | HIGH VOLTAGE (6/11KV AND ABOVE)                |
| <b>IACS</b> | - | INTERNATIONAL ANNEALED COPPER STANDARD         |
| <b>IEC</b>  | - | INTERNATIONAL ELECTROTECHNICAL COMMISSION      |
| <b>ISO</b>  | - | INTERNATIONAL ORGANIZATION FOR STANDARDIZATION |
| <b>LV</b>   | - | LOW VOLTAGE (600/1000V)                        |
| <b>NFC</b>  | - | REFERENCE FOR FRENCH SPECIFICATIONS            |
| <b>PVC</b>  | - | POLYVINYL CHLORIDE COMPOUND                    |
| <b>XLPE</b> | - | CROSS - LINKED POLYETHYLENE                    |



NOTES:

Handwriting practice lines consisting of 20 horizontal dotted lines.

NOTES:

Handwriting practice lines consisting of 25 horizontal dotted lines.





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