

at the heart of every project

# MESC CABLES



ميسك

M E S C

The background of the entire page is a close-up photograph of a large industrial spool of copper wire. The wire is a bright, metallic copper color and is wound in a dense, helical pattern. In the foreground, a single, thick copper cable is visible, slightly out of focus, running horizontally across the bottom left. The lighting is warm, highlighting the texture and sheen of the copper.

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# INTRODUCTION

Middle East Specialized Cables Company (MESC), the number one Instrumentation and Special Cables manufacturer in the Middle East.

Middle East Specialized Cable Co. (MESC) was founded as a privately owned in Riyadh in 1993 to cater the growing industry of specialized cables in the region. It started rolling its machines in 1994 and selling in 1995. After consolidating its presence in KSA as the market leader, MESC succeeded in penetrating other market in GCC, Middle East, North Africa, Europe and USA. In 2007 it became a joint stock company and its shares floated on Saudi Stock market.

Over the years, MESC has expanded its production to cover all types and ranges of cables by acquiring existing companies, establishing new companies and joint ventures. Its products range includes the Industrial, Instrumentation and process Control Cable, Special Cable (BMS), Low Voltage Power cables, Medium Voltage Power cables, Overhead lines, Offshore Cables, Railway Signaling and power cables and any types of customized cables manufactured as per the customers' needs and specifications.

MESC plants, located respectively in Saudi Arabia, Jordan and UAE consist of ultra-modern facilities, high tech machinery and well- equipped laboratories, built for conducting various routing and type tests.

MESC operate with clearly defined and documented quality systems set in accordance with the guidelines of ISO9001, ISO14001 and ISO 45001 for all activities right from the selection of raw material suppliers, schedule planning, production, testing and to delivery of cables, with a policy aiming for total customer satisfaction. The Medium Voltage Cables are produced in the technical collaboration of Fujikura Japan. MESC products are manufactured to international standards, tested and certified by prestigious institutions such as: 3P (Denmark), BASEC, BSI, (UK), Cables Technology Laboratories Inc. (USA), CSA (Canada), IMQ, (Italy), KEMA (Netherland), Jordanian Institution for Standard and Meteorology (JQM), Saudi Arabian Standards Organization (SASO), UL (USA), VDE (Germany), Warrington Fire Research (UK).

MESC products are approved by all oil, gas, petrochemical, power and desalination utilities in the MENA region, such as: Aramco, Sabic, STC, SEC (KSA), Kuwait Oil Co. (KOS), KNPC (Kuwait), Qatar Petroleum, MEW (Qatar), ADCO, GASCO, ADNOC, ADMA -OPCO, ZADCO, TAKRERER, DEWA, FEWA, SEWA, ADGAS, (UAE), MESC are also approved by many major international EPC contractors such as: ABB, ABV Rock Group, Bechtel, Daelim Engineering co., Doosan Heavy Industries, Fisia Italiamapianti, Fluor Daniel, Hyundai Engineering & construction Co., JGC Corporation, NPCC, Siemens, SK Engineering, Snamprogetti, Technicas, Technip, Toyo Engineering Co. and many other.





#### **MESC- UAE**

Middle East Specialized Cables (MESC) LLC, UAE was established in 2008. The plant is located at Al Ghail Industrial Park in Ras Al Khaimah, UAE. The factory is spread over an area of 54,000 square meters which houses the production facility, offices, workshops facilities, and warehouse.

The new ultra-modern manufacturing facility started its operations in 2010, and was officially inaugurated by His Highness Sheikh Saud bin Saqr Al Qasimi, Supreme Council Member and Ruler of Ras Al Khaimah.

The plant has an advanced laboratory with extensive range of test and measurement equipment specifically for the flame retardant control and power cables, fire resistant instrumentation cables, and low smoke halogen free cables. Moreover, MESC has the ability to design cables which comply with all major international standards such as IEC, BS, DIN VDE, ICEA, UL, etc. The RAK facility has also achieved the ISO 9001, ISO 14001 and ISO 45001 certifications, and operates with clearly defined and documented quality system set in accordance with the guidelines of ISO with its policy aiming for total customer satisfaction.

MESC RAK is an ESMA-certified facility, and an approved and certified vendor of UAE federal agencies such as Ministry of Public Works, FEWA, SEWA, ADWEA, Bahrain's EWA, Kuwait's MEW, GASCO, ZADCO and other established contractors and consultants.



## MANUFACTURING FACILITIES



## MANUFACTURING FACILITIES



# CERTIFICATIONS & APPROVALS



# CERTIFICATIONS & APPROVALS



# CERTIFICATIONS & APPROVALS

**KEMA Quality**

## TEST CERTIFICATE

Issued to: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

For the product: Power cables with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) to 30 kV (Um = 36 kV) Part 1: Cables for rated voltages of 1 kV (Um = 1.2 kV) and 3 kV (Um = 3.6 kV)

Trade name: MESC

Type/Model: CU/XLPE/PVC/3x0.6/10kV

Rating: 10kV/100°C

Manufacturer for: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

Requirements: IEC 60502-1:2004+A1:2009

Remarks: This cable meets the requirements

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 2146404.01.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amman, 28 June 2011 Number: 2146404.01

DEKRA Certification B.V.

Dr. G.J. Zwaenink  
Managing Director

H.R.M. Boreels  
Certification Manager

Drinking, recreation, walking and configuration suitable for the terrain (DIN EN 12600) is not a requirement for this product.

DEKRA Certification B.V. | Boreels 1051, 8025 NQ Arnhem, P.O. Box 1105, 8002 ED Arnhem, The Netherlands  
T +31 86 66 0300 F +31 86 66 0310 www.dekra-certification.com Company registration 0005358

**DEKRA**

## TEST CERTIFICATE

Issued to: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

For the product: Armoured power cable XLPE insulated and MDPE outer sheath

Trade name: MESC

Type/Model: CU/XLPE/PVC/3x0.6/10kV

Rating: 0.6/10kV

Manufacturer by: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

Subject: Power cable with extruded insulation and their accessories for rated voltages from 1 kV (Um = 1.2 kV) to 30 kV (Um = 36 kV) Part 1: Cables for rated voltages of 1 kV (Um = 1.2 kV) and 3 kV (Um = 3.6 kV)

Requirements: IEC 60502-1:2004+A1:2009

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 2173108.51.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amman, 21 October 2011 Number: 2173108.51

DEKRA Certification B.V.

Dr. G.J. Zwaenink  
Managing Director

H.R.M. Boreels  
Certification Manager

Drinking, recreation, walking and configuration suitable for the terrain (DIN EN 12600) is not a requirement for this product.

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**KEMA Quality**

## TEST CERTIFICATE

Issued to: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

For the product: Single-core, thermosetting insulated armoured cables for voltages of 10kV (Um = 12kV) to 30kV (Um = 36kV)

Trade name: MESC

Type/Model: CU/XLPE/PVC/3x0.6/10kV

Rating: 10kV/100°C

Manufacturer for: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

Requirements: IEC 60502-1:2004+A1:2009

Remarks: This cable meets the requirements

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 2146404.01.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amman, 28 June 2011 Number: 2146404.01

DEKRA Certification B.V.

Dr. G.J. Zwaenink  
Managing Director

H.R.M. Boreels  
Certification Manager

Drinking, recreation, walking and configuration suitable for the terrain (DIN EN 12600) is not a requirement for this product.

DEKRA Certification B.V. | Boreels 1051, 8025 NQ Arnhem, P.O. Box 1105, 8002 ED Arnhem, The Netherlands  
T +31 86 66 0300 F +31 86 66 0310 www.dekra-certification.com Company registration 0005358

**DEKRA**

## TEST CERTIFICATE

Issued to: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

For the product: Non-sheathed cable with PVC insulation for 90°C

Trade name: MESC

Type/Model: CU/PVC/1x0.6/10kV

Rating: 10kV/90°C

Manufacturer by: Middle East Specialized Cables Co.  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

Subject: Polyvinylchloride insulated cables of rated voltages up to and including 450/750 V Part 2: Non-sheathed cables for fixed wiring

Requirements: IEC 60227-5:1993 A1:1997

Remarks: The tested cable meets the requirements of the IEC 60227-5:1993 A1:1997. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 2160813.55.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

Amman, 28 March 2011 Number: 2160813.55

DEKRA Certification B.V.

Dr. G.J. Zwaenink  
Managing Director

H.R.M. Boreels  
Certification Manager

Drinking, recreation, walking and configuration suitable for the terrain (DIN EN 12600) is not a requirement for this product.

DEKRA Certification B.V. | Boreels 1051, 8025 NQ Arnhem, P.O. Box 1105, 8002 ED Arnhem, The Netherlands  
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**Test Report**

**Client:** Middle East Specialized Cables Co.  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

**Report No.:** NAC027 Issue 2

**Issue Date:** 19 November 2012

**Reference:** NAC027

**Items Tested:** 1 sample of Electric Cable  
BS 6500:2000 Including Amendments 1, 2 & 3 and Corrigenda Nos. 1 & 2:2000 Including 13631, 14200, 15651, 15407 & 16644  
BASEC PCR Issue 5

**Test Results:** The sample submitted complied with the requirements of the specification for the tests which were requested. "Issue 2 of this Report supersedes all previous issues. The amendment giving rise to this issue of the Report can be ascertained by contacting the authorizing signatory."

**Tested by:** I Telling

**Authorised by:** I McGuinness

**Issue Date:** 19 November 2012

**Test Technician:** Laboratory Manager

British Approvals Service for Cables  
Presley House  
Crowthill  
Milton Keynes  
MK9 0ES UK  
T: 01908 267250  
F: 01908 267255  
E: mail@basec.org.uk  
W: www.basec.org.uk

**BASEC**

The results presented in this report relate only to the sample under study at the time of testing, and to the specific tests carried out. This report may not cover all the tests required to establish conformity of the sample with the Standard listed. This report does not represent any Approval or Certification by BASEC of the product or of the associated manufacturer.

**DEKRA**

## TEST CERTIFICATE

Issued to: Middle East Specialized Cables (MESC)  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

For the product: Seven-core unarmoured street lighting cables

Trade name: MESC

Type/Model: CU/PVC/PVC 2x2.5/2x15 SQ MM

Rating: 600/1000 V

Manufacturer by: Middle East Specialized Cables (MESC)  
Ras Al Khaima Free Zone  
P.O. Box 12566  
Ras Al Khaima  
United Arab Emirates

Requirements: MEW Technical specifications for 600/1000 V, 5 core unarmoured street lighting cables. The standard is partial based on the IEC 60204-4 and BS 6748

Remarks: The tested cable meets the requirements of the Government of Kuwait (MEW 201/2013) Ministry of Electricity & Water

This Test Certificate is granted on account of an examination by DEKRA, the results of which are laid down in a confidential file no. 216477.52.

The examination has been carried out on one single specimen of the product, submitted by the manufacturer. The manufacturer does not include an assessment of the manufacturer's production. Conformity of the production with the specimen tested by DEKRA is not the responsibility of DEKRA.

This DEKRA Test Certificate is valid until 31 May 2017

Amman, 27 May 2014 Number: 216477.52

DEKRA Certification B.V.

Dr. G.J. Zwaenink  
Managing Director

H.R.M. Boreels  
Certification Manager

Drinking, recreation, walking and configuration suitable for the terrain (DIN EN 12600) is not a requirement for this product.

DEKRA Certification B.V. | Boreels 1051, 8025 NQ Arnhem, P.O. Box 1105, 8002 ED Arnhem, The Netherlands  
T +31 86 66 0300 F +31 86 66 0310 www.dekra-certification.com Company registration 0005358

**KEMA**



## PVC INSULATED NON SHEATHED SINGLE CORE CABLE

### RATED TEMPERATURE\* 70°C & 90°C

SPECIFICATION: BS EN 50525-2-31 & IEC 60227-3



#### APPLICATION

These cables are used for the purpose of lighting in residential and commercial building in surface mounted or embedded conduits. Suitable for earth DC when fixed installation inside appliances, switch gear and control gear.

#### CONSTRUCTION

##### Conductor

Plain Annealed Copper to IEC60228, Solid Conductor corresponds to Class 1, Stranded Conductor correspond to Class 2.

##### Insulation

PVC Type TI 1 Rated 70°C as per BS EN 50363-3

PVC Type TI 3 Rated 90°C as per BS EN 50363-3

##### Printing Text

MESC CU/PVC "SIZE" "VOLTAGE GRADE" "RATED TEMPERATURE" "YEAR" COUNTRY OF ORIGIN

#### TECHNICAL DATA

##### Voltage Grade

300/500 V up to 1.0 mm<sup>2</sup>, 450/750 V for 1.5 mm<sup>2</sup> & above.

##### Flame Retardant

IEC 60332-1

##### Minimum Bending Radius

6 x Over all Diameter.

#### TABLE

| CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | CLASS OF CONDUCTOR | INSULATION THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C [MAX.] Ω/Km | CURRENT CARRYING CAPACITY AT 30 °C IN FREE AIR (1 PHASE) Amp. | CURRENT CARRYING CAPACITY AT 30 °C IN FREE AIR (3 PHASE) Amp. |
|---------------------------------------------------|--------------------|---------------------------|--------------------------|------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| 0.5                                               | 1                  | 0.6                       | 2.1                      | 9                      | 36.0                                      | --                                                            | --                                                            |
| 0.75                                              | 1                  | 0.6                       | 2.2                      | 11                     | 24.5                                      | --                                                            | --                                                            |
| 1                                                 | 1                  | 0.6                       | 2.4                      | 14                     | 18.1                                      | 17                                                            | 16                                                            |
| 1.5                                               | 1                  | 0.7                       | 2.9                      | 21                     | 12.1                                      | 21                                                            | 20                                                            |
| 2.5                                               | 1                  | 0.8                       | 3.5                      | 33                     | 7.41                                      | 30                                                            | 26                                                            |
| 4                                                 | 1                  | 0.8                       | 3.9                      | 48                     | 4.61                                      | 40                                                            | 36                                                            |
| 6                                                 | 1                  | 0.8                       | 4.4                      | 67                     | 3.08                                      | 50                                                            | 45                                                            |
| 1.5                                               | 2                  | 0.7                       | 3.1                      | 22                     | 12.1                                      | 21                                                            | 20                                                            |
| 2.5                                               | 2                  | 0.8                       | 3.7                      | 34                     | 7.41                                      | 30                                                            | 26                                                            |
| 4                                                 | 2                  | 0.8                       | 4.2                      | 51                     | 4.61                                      | 40                                                            | 36                                                            |
| 6                                                 | 2                  | 0.8                       | 4.8                      | 71                     | 3.08                                      | 50                                                            | 45                                                            |
| 10                                                | 2                  | 1.0                       | 7.2                      | 119                    | 1.83                                      | 68                                                            | 61                                                            |
| 16                                                | 2                  | 1.0                       | 7.2                      | 170                    | 1.15                                      | 90                                                            | 81                                                            |
| 25                                                | 2                  | 1.2                       | 8.9                      | 281                    | 0.727                                     | 118                                                           | 106                                                           |
| 35                                                | 2                  | 1.2                       | 10.1                     | 379                    | 0.524                                     | 145                                                           | 130                                                           |
| 50                                                | 2                  | 1.4                       | 11.8                     | 509                    | 0.387                                     | 175                                                           | 160                                                           |
| 70                                                | 2                  | 1.4                       | 13.6                     | 717                    | 0.268                                     | 220                                                           | 200                                                           |
| 95                                                | 2                  | 1.6                       | 16.0                     | 990                    | 0.193                                     | 270                                                           | 240                                                           |
| 120                                               | 2                  | 1.6                       | 17.6                     | 1227                   | 0.153                                     | 310                                                           | 280                                                           |
| 150                                               | 2                  | 1.8                       | 19.5                     | 1510                   | 0.124                                     | 355                                                           | 320                                                           |
| 185                                               | 2                  | 2.0                       | 21.8                     | 1892                   | 0.0991                                    | 405                                                           | 365                                                           |

#### Correction factors for ambient temperature.

| Ambient temperature | 35   | 40   | 45   | 50   | 55   | 60   | 65   |
|---------------------|------|------|------|------|------|------|------|
| Correction factor   | 0.94 | 0.87 | 0.79 | 0.71 | 0.61 | 0.50 | 0.35 |

**Available Color:** Black, Blue, Brown, Green, Grey, Orange, Pink, Red, Turquoise, Violet, White & Green/Yellow. Other colors are available upon request

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet. Other lengths are available upon request.

**Special Feature\*:** Cables are also available with Rated temperature 105°C confirming to UL Standard.

#### CENELEC CODE

| USAGE           | General Purpose | Heat Resisting (90°C) |
|-----------------|-----------------|-----------------------|
| Fixed Wiring    | H07V-U, H07V-R  | H07V2-U, H07V2-R      |
| Internal Wiring | H05V-U, H05V-R  | H05V2-U, H05V2-R      |

## FLEX PVC INSULATED NON SHEATHED SINGLE CORE CABLE

### RATED TEMPERATURE\* 70°C & 90°C

SPECIFICATION: BS EN 50525-2-31 & IEC 60227-5



#### APPLICATION

These cables are used for the purpose of lighting in residential and commercial building in surface mounted or embedded conduits. Suitable for earth DC when fixed installation inside appliances, switch gear and control gear.

#### CONSTRUCTION

|               |                                                                                 |
|---------------|---------------------------------------------------------------------------------|
| Conductor     | Plain annealed copper flexible as per class 5 of IEC 60228.                     |
| Insulation    | PVC type T1 1 as per BS EN 50363-3<br>PVC type T1 3 as per BS EN 50363-3        |
| Printing Text | MESC CU/PVC "SIZE" "VOLTAGE GRADE" "RATED TEMPERATURE" "YEAR" COUNTRY OF ORIGIN |

#### TECHNICAL DATA

|                        |                                                                                |
|------------------------|--------------------------------------------------------------------------------|
| Voltage Grade          | 300/500 V up to 1.0 mm <sup>2</sup> 450/750 V for 1.5 mm <sup>2</sup> & above. |
| Flame Retardant        | IEC 60332-1                                                                    |
| Minimum Bending Radius | 6 x Over all Diameter.                                                         |

#### TABLE

| CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | CLASS OF CONDUCTOR | INSULATION THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | CURRENT CARRYING CAPACITY AT 30 °C IN FREE AIR (ONE PHASE) Amp. | CURRENT CARRYING CAPACITY AT 30 °C IN FREE AIR (THREE PHASE) Amp. |
|---------------------------------------------------|--------------------|---------------------------|--------------------------|------------------------|-------------------------------------------|-----------------------------------------------------------------|-------------------------------------------------------------------|
| 0.5                                               | 5                  | 0.6                       | 2.2                      | 9                      | 39.0                                      | --                                                              | --                                                                |
| 0.75                                              | 5                  | 0.6                       | 2.4                      | 12                     | 26.0                                      | --                                                              | --                                                                |
| 1                                                 | 5                  | 0.6                       | 2.6                      | 15                     | 19.5                                      | 17                                                              | 16                                                                |
| 1.5                                               | 5                  | 0.7                       | 3.0                      | 21                     | 13.3                                      | 21                                                              | 20                                                                |
| 2.5                                               | 5                  | 0.8                       | 3.6                      | 33                     | 7.98                                      | 30                                                              | 26                                                                |
| 4                                                 | 5                  | 0.8                       | 4.2                      | 49                     | 4.95                                      | 40                                                              | 36                                                                |
| 6                                                 | 5                  | 0.8                       | 4.8                      | 69                     | 3.30                                      | 50                                                              | 45                                                                |
| 10                                                | 5                  | 1.0                       | 6.1                      | 116                    | 1.91                                      | 68                                                              | 61                                                                |
| 16                                                | 5                  | 1.0                       | 7.1                      | 173                    | 1.21                                      | 90                                                              | 81                                                                |
| 25                                                | 5                  | 1.2                       | 8.8                      | 266                    | 0.780                                     | 118                                                             | 106                                                               |
| 35                                                | 5                  | 1.2                       | 10.0                     | 364                    | 0.554                                     | 145                                                             | 130                                                               |
| 50                                                | 5                  | 1.4                       | 11.9                     | 520                    | 0.386                                     | 175                                                             | 160                                                               |
| 70                                                | 5                  | 1.4                       | 13.9                     | 756                    | 0.272                                     | 220                                                             | 200                                                               |
| 95                                                | 5                  | 1.6                       | 15.9                     | 996                    | 0.206                                     | 270                                                             | 240                                                               |
| 120                                               | 5                  | 1.6                       | 17.6                     | 1257                   | 0.161                                     | 310                                                             | 280                                                               |
| 150                                               | 5                  | 1.8                       | 19.7                     | 1572                   | 0.129                                     | 355                                                             | 320                                                               |
| 185                                               | 5                  | 2.0                       | 21.9                     | 1964                   | 0.106                                     | 405                                                             | 365                                                               |

#### Correction factors for ambient temperature.

| Ambient temperature | 35   | 40   | 45   | 50   | 55   | 60   | 65   |
|---------------------|------|------|------|------|------|------|------|
| Correction factor   | 0.94 | 0.87 | 0.79 | 0.71 | 0.61 | 0.50 | 0.35 |

**Available Color:** Black, Blue, Brown, Green, Grey, Orange, Pink, Red, Turquoise, Violet, White & Green/Yellow. Other colors are available upon request

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet. Other lengths are available upon request.

**Special Feature\*:** Cables are also available with Rated temperature 105°C confirming to UL Standard.

#### CENELEC CODE

| USAGE           | General Purpose | Heat Resisting [90°C] |
|-----------------|-----------------|-----------------------|
| Fixed Wiring    | H07V-K          | H07V2-K               |
| Internal Wiring | H05V-K          | H05V2-K               |

at the heart of every project

## PVC INSULATED NON SHEATHED SINGLE CORE CABLE

### RATED TEMPERATURE\* 70°C & 90°C

TYPE BK & CK SPECIFICATION: BS 6231



#### APPLICATION

Type BK & CK: These cables are used for wiring of switch, control, metering, relay and Instrument Panels of Power Switchgear and for internal connections in rectifier equipment, motor Starters and Controllers.

#### CONSTRUCTION

##### Conductor

Plain annealed copper flexible as per class 5 of IEC 60228.

##### Insulation

PVC Type TI 1 Rated 70°C as per BS EN 50363-3.(Type BK)  
PVC Type TI 3 Rated 90°C as per BS EN 50363-3.(Type CK)

##### Printing Text

Type BK : "TYPE BK" "SIZE" " CU/PVC 600/1000 V " "YEAR" COUNTRY OF ORIGIN  
Type CK : "TYPE CK" "SIZE" CU/PVC HEAT RESISTING 90 " 600/1000 V" "YEAR" COUNTRY OF ORIGIN

#### TECHNICAL DATA

##### Voltage Grade

600/1000 Volts.

##### Flame Retardant

IEC 60332-1

##### Minimum Bending Radius

6 x Over all Diameter.

#### TABLE

| CONDUCTOR CROSS SECTIONAL AREA (mm²) | CLASS OF CONDUCTOR | INSULATION THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (1 PHASE) Amp. | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (3 PHASE) Amp. |
|--------------------------------------|--------------------|---------------------------|--------------------------|------------------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| 1                                    | 5                  | 0.8                       | 3.0                      | 20                     | 19.5                                      | --                                                           | --                                                           |
| 1.5                                  | 5                  | 0.8                       | 3.2                      | 24                     | 13.3                                      | 26                                                           | 23                                                           |
| 2.5                                  | 5                  | 0.8                       | 3.7                      | 35                     | 7.98                                      | 35                                                           | 30                                                           |
| 4                                    | 5                  | 0.8                       | 4.2                      | 51                     | 4.95                                      | 46                                                           | 40                                                           |
| 6                                    | 5                  | 0.8                       | 4.8                      | 71                     | 3.30                                      | 58                                                           | 50                                                           |
| 10                                   | 5                  | 1.0                       | 6.2                      | 119                    | 1.91                                      | 79                                                           | 69                                                           |
| 16                                   | 5                  | 1.0                       | 7.9                      | 179                    | 1.21                                      | 105                                                          | 91                                                           |
| 25                                   | 5                  | 1.2                       | 9.7                      | 277                    | 0.780                                     | 140                                                          | 122                                                          |
| 35                                   | 5                  | 1.2                       | 11.1                     | 375                    | 0.554                                     | 174                                                          | 151                                                          |
| 50                                   | 5                  | 1.4                       | 13.1                     | 535                    | 0.386                                     | 212                                                          | 184                                                          |
| 70                                   | 5                  | 1.4                       | 15.7                     | 774                    | 0.272                                     | 269                                                          | 234                                                          |
| 95                                   | 5                  | 1.6                       | 17.9                     | 1022                   | 0.206                                     | 331                                                          | 288                                                          |
| 120                                  | 5                  | 1.6                       | 19.8                     | 1284                   | 0.161                                     | 386                                                          | 336                                                          |
| 150                                  | 5                  | 1.8                       | 22.1                     | 1604                   | 0.129                                     | 442                                                          | 385                                                          |

#### Correction factors for ambient temperature.

| Ambient temperature | 10   | 15   | 20   | 25   | 30  | 35   | 40   | 45   | 50   |
|---------------------|------|------|------|------|-----|------|------|------|------|
| Correction factor   | 1.22 | 1.17 | 1.12 | 1.07 | 1.0 | 0.94 | 0.87 | 0.79 | 0.71 |

**Available Color:** Black, Blue, Brown, Green, Grey, Orange, Pink, Red, Turquoise, Violet, White & Green/Yellow.  
Other colors are available upon request

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet. Other lengths are available upon request.

**Special Feature\*:** Type CK is also known as Tri-rated Equipment Wire Rated  
BS 6231: 90°C, 600/1000 V; UL 1015: 105°C, 600 V and CSA c 22.2: 105°C, 600V

# LOW SMOKE ZERO HALOGEN INSULATED SINGLE CORE WIRING CABLE

**RATED TEMPERATURE 90°C**

**SPECIFICATION: BS EN 50525-3-41**



## APPLICATION

These cables are used for the purpose of lighting in residential and commercial building in surface mounted or embedded conduits. Suitable for earth DC when fixed installation inside appliances, switch gear and control gear.

## CONSTRUCTION

### Conductor

Plain annealed copper stranded as per class 2 of IEC 60228.

### Insulation

Low Smoke Zero Halogen Compound Type EI 5 as per BS EN 50363-5

### Printing Text

MESC CU/LSZH "SIZE" "450/750 V" "RATED TEMPERATURE" "YEAR" COUNTRY OF ORIGIN

## TECHNICAL DATA

### Voltage Grade

450/750 V.

### Flame Retardant

IEC 60332-1

### Halogen Acid Gas

MAX. 0.5% to IEC 60754-1

### Light Transmittance

≥ 60% to IEC 61034-2

### Minimum Bending Radius

6 x Over all Diameter.

## TABLE

| CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | CLASS OF CONDUCTOR | INSULATION THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (1 PHASE) Amp. | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (3 PHASE) Amp. |
|---------------------------------------------------|--------------------|---------------------------|--------------------------|------------------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| 1.5                                               | 2                  | 0.7                       | 3.1                      | 22                     | 12.1                                      | 21                                                           | 20                                                           |
| 2.5                                               | 2                  | 0.8                       | 3.7                      | 34                     | 7.41                                      | 30                                                           | 26                                                           |
| 4                                                 | 2                  | 0.8                       | 4.2                      | 51                     | 4.61                                      | 40                                                           | 36                                                           |
| 6                                                 | 2                  | 0.8                       | 4.8                      | 71                     | 3.08                                      | 50                                                           | 45                                                           |
| 10                                                | 2                  | 1.0                       | 7.2                      | 119                    | 1.83                                      | 68                                                           | 61                                                           |
| 16                                                | 2                  | 1.0                       | 7.2                      | 170                    | 1.15                                      | 90                                                           | 81                                                           |
| 25                                                | 2                  | 1.2                       | 8.9                      | 281                    | 0.727                                     | 118                                                          | 106                                                          |
| 35                                                | 2                  | 1.2                       | 10.1                     | 379                    | 0.524                                     | 145                                                          | 130                                                          |
| 50                                                | 2                  | 1.4                       | 11.8                     | 509                    | 0.387                                     | 175                                                          | 160                                                          |
| 70                                                | 2                  | 1.4                       | 13.6                     | 717                    | 0.268                                     | 220                                                          | 200                                                          |
| 95                                                | 2                  | 1.6                       | 16.0                     | 990                    | 0.193                                     | 270                                                          | 240                                                          |
| 120                                               | 2                  | 1.6                       | 17.6                     | 1227                   | 0.153                                     | 310                                                          | 280                                                          |
| 150                                               | 2                  | 1.8                       | 19.5                     | 1510                   | 0.124                                     | 355                                                          | 320                                                          |
| 185                                               | 2                  | 2.0                       | 21.8                     | 1892                   | 0.0991                                    | 405                                                          | 365                                                          |

### Correction factors for ambient temperature.

| Ambient temperature | 35   | 40   | 45   | 50   | 55   | 60   | 65   |
|---------------------|------|------|------|------|------|------|------|
| Correction factor   | 0.94 | 0.87 | 0.79 | 0.71 | 0.61 | 0.50 | 0.35 |

**Available Color:** Black, Blue, Brown, Green, Grey, Orange, Pink, Red, Turquoies, Violet, White & Green/Yellow.  
Other colors are available upon request.

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet. Other lengths are available upon request.

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## MULTI CORE FLEXIBLE PVC INSULATED PVC SHEATHED CABLE

**RATED TEMPERATURE\* 70°C & 90°C**

SPECIFICATION: BS EN 50525-2-11



### APPLICATION

These cables are used for wiring of switch, control, metering, relay and instrument panels of power switchgear and for internal connections in rectifier equipment, motor starters and controllers.

### CONSTRUCTION

#### Conductor

Plain annealed copper flexible as per class 5 of IEC 60228.

#### Insulation

PVC Type TI 2 Rated 70°C as per BS EN 50363-3.  
PVC Type TI 3 Rated 90°C as per BS EN 50363-3.

#### Color Code

Two core: Blue & Brown.  
Three core: Green/Yellow, Blue & Brown.  
Four core: Green/Yellow, Black, and Blue & Brown.

#### Assembly

Cores twisted together to make a round assembly with fillers wherever necessary.

#### Outer Sheath

PVC Type TM 2 as per BS EN 50363-4-1 & PVC Type TM 3 as per BS EN 50363-4-1. Outer Sheath color shall be White. Other color can be supplied on request.

### TECHNICAL DATA

#### Voltage Grade

300/300 V R.M.S.

#### Flame Retardant

IEC 60332-1

#### Minimum Bending Radius

6 x Over all Diameter.

#### Max. Short Circuit Temperature

160°C (max. duration 5 sec.)

### TABLE

| NO OF CORE | CONDUCTOR CRESS SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (1 PHASE) Amp. | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (3 PHASE) Amp. |
|------------|---------------------------------------------------|---------------------------|-----------------------------|--------------------------|------------------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| 2          | 0.50                                              | 0.5                       | 0.6                         | 5.2                      | 40                     | 39.0                                      | 3                                                            | 3                                                            |
| 2          | 0.75                                              | 0.5                       | 0.6                         | 5.7                      | 49                     | 26.0                                      | 6                                                            | 6                                                            |
| 3          | 0.50                                              | 0.5                       | 0.6                         | 5.6                      | 48                     | 39.0                                      | 3                                                            | 3                                                            |
| 3          | 0.75                                              | 0.5                       | 0.6                         | 6.0                      | 60                     | 26.0                                      | 6                                                            | 6                                                            |
| 4          | 0.50                                              | 0.5                       | 0.6                         | 6.1                      | 58                     | 39.0                                      | 3                                                            | 3                                                            |
| 4          | 0.75                                              | 0.5                       | 0.6                         | 6.6                      | 71                     | 26.0                                      | 6                                                            | 6                                                            |

#### Correction factors for ambient temperature.

| Ambient temperature | 35   | 40   | 45   | 50   | 55   |
|---------------------|------|------|------|------|------|
| Correction factor   | 0.96 | 0.92 | 0.87 | 0.71 | 0.50 |

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

**Special Feature\*:** This cable is also available with Rated temperature 105 °C confirming to UL-Standard.

#### CENELEC CODE:

| USAGE      | 70°C    | 90°C      |
|------------|---------|-----------|
| Light duty | H03VV-F | H03V2V2-F |

## MULTI CORE FLEXIBLE PVC INSULATED PVC SHEATHED CABLE

**RATED TEMPERATURE\* 70°C & 90°C**

**SPECIFICATION: BS EN 50525-2-11 & IEC 60227-5**



### APPLICATION

These cables are useful for use in dry or damp locations for medium duties in domestic premises, kitchens and offices. Suitable for washing machines, refrigerators etc. Can be used for cooking and heating appliances provided that the cable does not come in contact with the hot parts.

### CONSTRUCTION

|              |                                                                                                                                                                        |
|--------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | Plain annealed copper flexible as per class 5 of IEC 60228.                                                                                                            |
| Insulation   | PVC Type TI 2 Rated 70°C as per BS EN 50363-3.<br>PVC Type TI 3 Rated 90°C as per BS EN 50363-3.                                                                       |
| Color Code   | Two core: Blue & Brown. Three core: Green/Yellow, Blue & Brown. Four core: Green/Yellow, Black, and Blue & Brown. Five core: Green/Yellow, Black, Blue, Brown & Black. |
| Assembly     | Cores twisted together to make a round assembly with fillers wherever necessary.                                                                                       |
| Outer Sheath | PVC Type TM 2 as per BS EN 50363-4-1 & PVC Type TM 3 as per BS EN 50363-4-1. Outer Sheath color shall be White, But any other color can be supplied on request.        |

### TECHNICAL DATA

|                                |                              |
|--------------------------------|------------------------------|
| Voltage Grade                  | 300/500 V R.M.S.             |
| Flame Retardant                | IEC 60332-1                  |
| Minimum Bending Radius         | 6 x Over all Diameter.       |
| Max. Short Circuit Temperature | 160°C (max. duration 5 sec.) |

### TABLE

| NO OF CORE | CONDUCTOR CRESS SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR [1 PHASE] Amp. | CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR [3 PHASE] Amp. |
|------------|---------------------------------------------------|---------------------------|-----------------------------|--------------------------|------------------------|-------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|
| 2          | 0.75                                              | 0.6                       | 0.8                         | 6.5                      | 61                     | 26.0                                      | 6                                                            | 6                                                            |
| 2          | 1.0                                               | 0.6                       | 0.8                         | 6.8                      | 70                     | 19.5                                      | 10                                                           | 10                                                           |
| 2          | 1.5                                               | 0.7                       | 0.8                         | 7.7                      | 91                     | 13.3                                      | 16                                                           | 16                                                           |
| 2          | 2.5                                               | 0.8                       | 1.0                         | 9.4                      | 139                    | 7.98                                      | 25                                                           | 20                                                           |
| 2          | 4                                                 | 0.8                       | 1.1                         | 10.7                     | 192                    | 4.95                                      | 32                                                           | 25                                                           |
| 3          | 0.75                                              | 0.6                       | 0.8                         | 6.9                      | 73                     | 26.0                                      | 6                                                            | 6                                                            |
| 3          | 1.0                                               | 0.6                       | 0.8                         | 7.2                      | 85                     | 19.5                                      | 10                                                           | 10                                                           |
| 3          | 1.5                                               | 0.7                       | 0.9                         | 8.4                      | 114                    | 13.3                                      | 16                                                           | 16                                                           |
| 3          | 2.5                                               | 0.8                       | 1.1                         | 10.2                     | 175                    | 7.98                                      | 25                                                           | 20                                                           |
| 3          | 4                                                 | 0.8                       | 1.2                         | 11.6                     | 244                    | 4.95                                      | 32                                                           | 25                                                           |
| 4          | 0.75                                              | 0.6                       | 0.9                         | 7.7                      | 91                     | 26.0                                      | 6                                                            | 6                                                            |
| 4          | 1.0                                               | 0.6                       | 0.9                         | 8.1                      | 106                    | 19.5                                      | 10                                                           | 10                                                           |
| 4          | 1.5                                               | 0.7                       | 1.0                         | 9.3                      | 142                    | 13.3                                      | 16                                                           | 16                                                           |
| 4          | 2.5                                               | 0.8                       | 1.1                         | 11.1                     | 211                    | 7.98                                      | 25                                                           | 20                                                           |
| 4          | 4                                                 | 0.8                       | 1.2                         | 12.6                     | 297                    | 4.95                                      | 32                                                           | 25                                                           |
| 5          | 0.75                                              | 0.6                       | 0.9                         | 8.4                      | 112                    | 26.0                                      | 6                                                            | 6                                                            |
| 5          | 1.0                                               | 0.6                       | 0.9                         | 8.8                      | 131                    | 26.0                                      | 10                                                           | 10                                                           |
| 5          | 1.5                                               | 0.7                       | 1.1                         | 10.4                     | 181                    | 19.5                                      | 16                                                           | 16                                                           |
| 5          | 2.5                                               | 0.8                       | 1.2                         | 12.4                     | 268                    | 13.3                                      | 25                                                           | 20                                                           |
| 5          | 4                                                 | 0.8                       | 1.4                         | 13.8                     | 356                    | 4.95                                      | 32                                                           | 25                                                           |

#### Correction factors for ambient temperature.

|                     |      |      |      |      |      |
|---------------------|------|------|------|------|------|
| Ambient temperature | 35   | 40   | 45   | 50   | 55   |
| Correction factor   | 0.96 | 0.92 | 0.87 | 0.71 | 0.50 |

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet. Other lengths are available upon request.

**Special Feature\*:** This cable is also available with Rated temperature 105 °C conforming to UL-Standard.

CENELEC CODE:

| USAGE      | 70°C    | 90°C      | USAGE         | 70°C    | 90°C      |
|------------|---------|-----------|---------------|---------|-----------|
| Light duty | H03VV-F | H03V2V2-F | Ordinary Duty | H05VV-F | H05V2V2-F |

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## MULTI CORE FLEXIBLE PVC INSULATED PVC SHEATHED CABLE

### RATED TEMPERATURE 70°C & 90°C

SPECIFICATION: Adapted from VDE-0281 & VDE-0250



#### APPLICATION

This flexible control cable is suitable for all electrical installations in dry or humid locations, under industrial conditions, but not in the open air. Applications include machine tool manufacture, power stations, heating and air conditioning installations etc.

#### CONSTRUCTION

|              |                                                                                                                                                                                 |
|--------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | Plain annealed copper flexible as per class 5 of IEC 60228.                                                                                                                     |
| Insulation   | PVC Type TI 2 Rated 70°C as per BS EN 50363-3.<br>PVC Type TI 3 Rated 90°C as per BS EN 50363-3.                                                                                |
| Color Code   | Two core: Blue & Brown.<br>Three core: Green/Yellow, Blue & Brown.<br>Four core: Green/Yellow, Black, and Blue & Brown.<br>Five core: Green/Yellow, Black, Blue, Brown & Black. |
| Assembly     | Cores twisted together to make a round assembly with fillers wherever necessary.                                                                                                |
| Outer Sheath | PVC Type TM 2 as per BS EN 50363-4-1 & PVC Type TM 3 as per BS EN 50363-4-1.<br>Outer Sheath color shall be White, But any other color can be supplied on request.              |

#### TECHNICAL DATA

|                                |                              |
|--------------------------------|------------------------------|
| Voltage Grade                  | 450/750 V R.M.S.             |
| Flame Retardant                | IEC 60332-1                  |
| Minimum Bending Radius         | 12 x Over all Diameter.      |
| Max. Short Circuit Temperature | 160°C (max. duration 5 sec.) |

**TABLE**

| NO OF CORE | CONDUCTOR CRESS SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) $\Omega$ /Km | CURRENT CARRING CAPACITY AT 30 °C IN AIR Amp. |
|------------|---------------------------------------------------|---------------------------|-----------------------------|--------------------------|------------------------|---------------------------------------------------|-----------------------------------------------|
| 2          | 6                                                 | 0.8                       | 1.0                         | 12.0                     | 257                    | 3.30                                              | 44                                            |
| 2          | 10                                                | 1.0                       | 1.1                         | 14.7                     | 402                    | 1.91                                              | 60                                            |
| 2          | 16                                                | 1.0                       | 1.1                         | 17.5                     | 589                    | 1.21                                              | 79                                            |
| 2          | 25                                                | 1.2                       | 1.2                         | 21.4                     | 896                    | 0.780                                             | 104                                           |
| 2          | 35                                                | 1.2                       | 1.2                         | 24.4                     | 1204                   | 0.554                                             | 127                                           |
| 3          | 6                                                 | 0.8                       | 1.0                         | 12.8                     | 322                    | 3.30                                              | 43                                            |
| 3          | 10                                                | 0.8                       | 1.1                         | 16.4                     | 534                    | 1.91                                              | 59                                            |
| 3          | 16                                                | 1.0                       | 1.2                         | 19.3                     | 781                    | 1.21                                              | 78                                            |
| 3          | 25                                                | 1.2                       | 1.2                         | 22.8                     | 1148                   | 0.780                                             | 102                                           |
| 3          | 35                                                | 1.2                       | 1.4                         | 26.0                     | 1550                   | 0.554                                             | 125                                           |
| 4          | 6                                                 | 0.8                       | 1.0                         | 14.0                     | 396                    | 3.30                                              | 42                                            |
| 4          | 10                                                | 1.0                       | 1.2                         | 17.9                     | 657                    | 1.91                                              | 57                                            |
| 4          | 16                                                | 1.0                       | 1.2                         | 21.0                     | 965                    | 1.21                                              | 76                                            |
| 4          | 25                                                | 1.2                       | 1.4                         | 25.6                     | 1465                   | 0.780                                             | 100                                           |
| 4          | 35                                                | 1.2                       | 1.4                         | 28.5                     | 1932                   | 0.554                                             | 122                                           |
| 5          | 6                                                 | 0.8                       | 1.1                         | 15.4                     | 363                    | 3.30                                              | 41                                            |
| 5          | 10                                                | 1.0                       | 1.2                         | 20.3                     | 818                    | 1.91                                              | 56                                            |
| 5          | 16                                                | 1.0                       | 1.2                         | 23.1                     | 1158                   | 1.21                                              | 75                                            |
| 5          | 25                                                | 1.2                       | 1.4                         | 28.1                     | 1761                   | 0.780                                             | 98                                            |
| 5          | 35                                                | 1.2                       | 1.6                         | 32.0                     | 2378                   | 0.554                                             | 120                                           |

**Correction factors for ambient temperature.**

| Ambient temperature | 35   | 40   | 45   | 50   | 55   | 60   | 65   |
|---------------------|------|------|------|------|------|------|------|
| Correction factor   | 0.94 | 0.87 | 0.79 | 0.71 | 0.61 | 0.50 | 0.35 |

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

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## PVC INSULATED PVC SHEATHED FLAT CABLES WITH EARTH CONTINUITY (E.C.C)

SPECIFICATION: BS EN 50525-2-11



### APPLICATION

Mainly for domestic and industrial wiring where there is little risk of mechanical damage.

### CONSTRUCTION

|             |                                                                                                                   |
|-------------|-------------------------------------------------------------------------------------------------------------------|
| Conductor   | Plain annealed Solid copper as per Class 1 to IEC 60228.                                                          |
| Insulation  | PVC Type TI-1 as per BS EN 50363-3. Two Cores lay parallel with bare ECC at center and sheathed.                  |
| Color Code  | Blue & Brown                                                                                                      |
| Over Sheath | PVC Type TM-1 as per BS EN 50363-4.1.Outer Sheath color shall be Grey .Other color are also available on request. |

### TECHNICAL DATA

|                   |                          |
|-------------------|--------------------------|
| Temperature Range | - 25°C to 70°C.          |
| Voltage Rating    | 300/500 V <sub>RMS</sub> |

### TABLE

| NO OF CORE | CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | ECC CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. LOWER LIMIT (mm) | APPROX OVERALL DIA. UPPER LIMIT (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | *CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (1 PHASE) Amp. | *CURRENT CARRING CAPACITY AT 30 °C IN FREE AIR (3 PHASE) Amp. |
|------------|---------------------------------------------------|-------------------------------------------------------|---------------------------|-----------------------------|--------------------------------------|--------------------------------------|------------------------|-------------------------------------------|---------------------------------------------------------------|---------------------------------------------------------------|
| 2          | 1.5                                               | 1                                                     | 0.7                       | 0.9                         | 4.2 X 8.0                            | 5.0 X 9.2                            | 88                     | 18.1                                      | 20                                                            | 17                                                            |
| 2          | 2.5                                               | 1.5                                                   | 0.7                       | 0.9                         | 5.2 X 9.6                            | 6.0 X 11.2                           | 135                    | 12.1                                      | 27                                                            | 24                                                            |

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

**Note:** Detail Please Refer the Technical Information Section.

## PVC INSULATED PVC SHEATHED CABLE FLAT TWIN AND THREE CORE

### SPECIFICATION: BS EN50252-2-31



#### APPLICATION

These cables are used in dry or damp locations for fixed installation. Suitable for Installation in walls, on boards or embedded in plaster.

#### CONSTRUCTION

##### Conductor

Plain annealed copper as per class 1 or class 2 of IEC-60228.

##### Insulation

PVC Type TI-1 as per BS EN 50363-3. Two Cores laid parallel with bare ECC at center and sheathed.

##### Color Code

Twin core: Red & Black.  
Three core: Red, Yellow (Centre core) and Blue.

##### Over Sheath

PVC Type TM-1 as per BS EN 50363-4.1. Outer Sheath color shall be Grey .Other color are also available on request.

#### TECHNICAL DATA

##### Temperature Range

- 25°C to 70°C.

##### Voltage Rating

300/500 V<sub>RMS</sub>

#### TABLE

| NO OF CORE | CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | CLASS OF CONDUCTOR | INSULATION THICKNESS (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT (kg/km) | CONDUCTOR RESISTANCE AT 20 °C (MAX.) Ω/Km | *CURRENT CARRYING CAPACITY AT 20 °C IN GROUND Amp. | *CURRENT CARRYING CAPACITY AT 30 °C IN AIR Amp. |
|------------|---------------------------------------------------|--------------------|---------------------------|-----------------------------|--------------------------|------------------------|-------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| 2          | 1.0                                               | 1                  | 0.6                       | 0.9                         | 6.8 X 4.4                | 53                     | 18.1                                      | --                                                 | --                                              |
| 2          | 1.5                                               | 1                  | 0.7                       | 0.9                         | 7.7 X 4.8                | 70                     | 12.1                                      | 32                                                 | 20                                              |
| 2          | 2.5                                               | 1                  | 0.8                       | 0.9                         | 8.9 X 5.4                | 100                    | 7.41                                      | 42                                                 | 27                                              |
| 2          | 4                                                 | 1                  | 0.8                       | 1.0                         | 10.1 X 6.1               | 139                    | 4.61                                      | 54                                                 | 37                                              |
| 2          | 6                                                 | 1                  | 0.8                       | 1.0                         | 11.1 X 6.6               | 185                    | 3.08                                      | 68                                                 | 48                                              |
| 2          | 1.5                                               | 2                  | 0.7                       | 0.9                         | 8.1 X 5.0                | 76                     | 12.1                                      | 32                                                 | 20                                              |
| 2          | 2.5                                               | 2                  | 0.8                       | 1.0                         | 9.5 X 5.9                | 110                    | 7.41                                      | 42                                                 | 27                                              |
| 2          | 4                                                 | 2                  | 0.8                       | 1.0                         | 10.7 X 6.4               | 148                    | 4.61                                      | 54                                                 | 37                                              |
| 2          | 6                                                 | 2                  | 0.8                       | 1.1                         | 12.0 X 7.2               | 201                    | 3.08                                      | 68                                                 | 48                                              |
| 2          | 10                                                | 2                  | 1.0                       | 1.2                         | 14.9 X 8.8               | 319                    | 1.83                                      | 90                                                 | 66                                              |
| 2          | 16                                                | 2                  | 1.0                       | 1.3                         | 17.3 X 10.1              | 461                    | 1.15                                      | 116                                                | 89                                              |
| 3          | 1.0                                               | 1                  | 0.6                       | 0.9                         | 9.2 X 4.4                | 76                     | 18.1                                      | --                                                 | --                                              |
| 3          | 1.5                                               | 1                  | 0.7                       | 0.9                         | 10.5 X 4.8               | 102                    | 12.1                                      | 26                                                 | 18                                              |
| 3          | 2.5                                               | 1                  | 0.8                       | 1.0                         | 12.6 X 5.7               | 152                    | 7.41                                      | 34                                                 | 35                                              |
| 3          | 4                                                 | 2                  | 0.8                       | 1.1                         | 15.1 X 6.7               | 224                    | 4.61                                      | 44                                                 | 34                                              |
| 3          | 6                                                 | 2                  | 0.8                       | 1.1                         | 16.8 X 7.2               | 296                    | 3.08                                      | 56                                                 | 43                                              |
| 3          | 10                                                | 2                  | 1.0                       | 1.2                         | 21.1 X 8.8               | 474                    | 1.83                                      | 75                                                 | 60                                              |
| 3          | 16                                                | 2                  | 1.0                       | 1.3                         | 24.5 X 10.1              | 686                    | 1.15                                      | 98                                                 | 80                                              |

**Packing:** Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

**Note:** Detail Please Refer the Technical Information Section.

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## POWER AND CONTROL, SINGLE & MULTI CORE, UNARMORED CABLE

CU/ XLPE/PVC SPECIFICATION: IEC 60502-1



### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground in the power and switching station, local distributors system Industrial plant and commercial building

### CONSTRUCTION

|                       |                                                                                                                                                                                                        |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor             | Stranded annealed plain circular copper to Class 2 of IEC 60228.                                                                                                                                       |
| Insulation            | Cross linked Polyethylene (XLPE) to IEC 60502-1                                                                                                                                                        |
| Color Code            | Single Core - Black or Natural<br>Two Core - Red & Black<br>Three Core - Red, Yellow & Blue<br>Four Core - Red, Yellow, Blue & Black for Cable<br>Five & above Core - Black cores with Number printing |
| Cabling#              | Cores are assembled in a concentric layer with filler (if necessary) for up to 4 Cores. Assembly with 5 cores or more is wrapped with a polyester tape with filler (if necessary)..                    |
| Over sheath           | Flame retardant PVC Type ST-2 as per IEC 60502-1 and confirming to IEC 60332-1.The color of the sheath shall be Black. Other sheath colors are also available on request.                              |
| Marking on the sheath | CU/XLPE/PVC NO OF CORES C X....MM2 600/1000V MESC YEAR IEC 60502-1 LENGTH METER MARKING                                                                                                                |

### TECHNICAL DATA

|                              |                                                                                                                                            |
|------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------|
| Temperature Range            | - 5°C to 90°C                                                                                                                              |
| Voltage Rating               | 600/1000 V                                                                                                                                 |
| Voltage Withstand (V/Minute) | 3500 RMS / 5 or 8400 DC / 5                                                                                                                |
| Min. Bending Radius (mm)     | 4 X Cable Overall Diameter (Up to 25 mm Over all Diameter of cable)<br>6 X Cable Overall Diameter (Above 25 mm Over all Diameter of cable) |
| Max Short Circuit Temp [°C]  | 250 (for 5 Second Maximum)                                                                                                                 |

### TABLE

| No Of Core (Nos.) | Conductor Cross Sectional Area (mm <sup>2</sup> ) | Insulation Thickness (mm) | Outer Sheath Thickness (mm) | Approx Over-All Dia. (mm) | Approx. Weight Of Cable (Kg/Km) | Dc Cond. Res. At 20 Deg. C Max. (Ohm/ Km) | Ac Cond. Res. At 90 Deg. C Max. (Ohm/ Km) | Inductance At 50 60Hz (MiliH /Km) | Inductive Reactance At 50 - 60Hz (Ohm/ Km) | Impedance At 50 - 60Hz & At 90 Deg. C (Ohm/Km) | Cond. Short Circuit Current Rating (kAmp/ Sec) | *Current Carrying Capacity At 20 °C In Ground Amp. | *Current Carrying Capacity At 30 °C In Air Amp. |
|-------------------|---------------------------------------------------|---------------------------|-----------------------------|---------------------------|---------------------------------|-------------------------------------------|-------------------------------------------|-----------------------------------|--------------------------------------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| 1                 | 1.5                                               | 0.7                       | 1.4                         | 5.9                       | 51                              | 12.1                                      | 15.43                                     | 0.336                             | 0.106                                      | 15.43                                          | 0.21                                           | 38                                                 | 32                                              |
| 1                 | 2.5                                               | 0.7                       | 1.4                         | 6.3                       | 63                              | 7.41                                      | 9.45                                      | 0.314                             | 0.099                                      | 9.449                                          | 0.35                                           | 51                                                 | 43                                              |
| 1                 | 4                                                 | 0.7                       | 1.4                         | 6.8                       | 80                              | 4.61                                      | 5.88                                      | 0.295                             | 0.093                                      | 5.879                                          | 0.56                                           | 66                                                 | 56                                              |
| 1                 | 6                                                 | 0.7                       | 1.4                         | 7.4                       | 105                             | 3.08                                      | 3.93                                      | 0.281                             | 0.088                                      | 3.928                                          | 0.85                                           | 82                                                 | 71                                              |
| 1                 | 10                                                | 0.7                       | 1.4                         | 8.3                       | 150                             | 1.83                                      | 2.33                                      | 0.266                             | 0.084                                      | 2.335                                          | 1.41                                           | 109                                                | 96                                              |
| 1                 | 16                                                | 0.7                       | 1.4                         | 9.3                       | 211                             | 1.15                                      | 1.47                                      | 0.255                             | 0.080                                      | 1.469                                          | 2.26                                           | 139                                                | 128                                             |
| 1                 | 25                                                | 0.9                       | 1.4                         | 11.0                      | 312                             | 0.727                                     | 0.927                                     | 0.255                             | 0.080                                      | 0.930                                          | 3.53                                           | 179                                                | 173                                             |
| 1                 | 35                                                | 0.9                       | 1.4                         | 12.1                      | 411                             | 0.524                                     | 0.668                                     | 0.248                             | 0.078                                      | 0.673                                          | 4.95                                           | 213                                                | 212                                             |
| 1                 | 50                                                | 1.0                       | 1.4                         | 13.7                      | 539                             | 0.387                                     | 0.493                                     | 0.245                             | 0.077                                      | 0.499                                          | 7.07                                           | 251                                                | 258                                             |
| 1                 | 70                                                | 1.1                       | 1.4                         | 15.7                      | 749                             | 0.268                                     | 0.342                                     | 0.242                             | 0.076                                      | 0.268                                          | 9.90                                           | 307                                                | 328                                             |
| 1                 | 95                                                | 1.1                       | 1.5                         | 17.7                      | 1007                            | 0.193                                     | 0.25                                      | 0.236                             | 0.074                                      | 0.257                                          | 13.44                                          | 366                                                | 404                                             |
| 1                 | 120                                               | 1.2                       | 1.5                         | 19.9                      | 1271                            | 0.153                                     | 0.20                                      | 0.228                             | 0.072                                      | 0.208                                          | 16.98                                          | 416                                                | 471                                             |
| 1                 | 150                                               | 1.4                       | 1.6                         | 22.1                      | 1560                            | 0.124                                     | 0.16                                      | 0.225                             | 0.071                                      | 0.173                                          | 21.22                                          | 465                                                | 541                                             |

| No Of Core (Nos.) | Conductor Cross Sectional Area (mm <sup>2</sup> ) | Insulation Thickness (mm) | Outer Sheath Thickness (mm) | Approx Overall Dia. (mm) | Approx. Weight Of Cable (Kg/Km) | Dc Cond. Res. At 20 Deg. C Max. (Ohm/Km) | Ac Cond. Res. At 90 Deg. C Max. (Ohm/Km) | Inductance At 50 60Hz (mH/Km) | Inductive Reactance At 50 - 60Hz (Ohm/Km) | Impedance At 50 - 60Hz & At 90 Deg. C (Ohm/Km) | Cond. Short Circuit Current Rating (Kamp/ Sec) | *Current Carrying Capacity At 20 °C In Ground Amp. | *Current Carrying Capacity At 30 °C In Air Amp. |
|-------------------|---------------------------------------------------|---------------------------|-----------------------------|--------------------------|---------------------------------|------------------------------------------|------------------------------------------|-------------------------------|-------------------------------------------|------------------------------------------------|------------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| 2                 | 1.5                                               | 0.7                       | 1.8                         | 9.8                      | 133                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 37                                                 | 26                                              |
| 3                 | 1.5                                               | 0.7                       | 1.8                         | 10.3                     | 154                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 30                                                 | 24                                              |
| 3                 | 2.5                                               | 0.7                       | 1.8                         | 11.2                     | 196                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                           | 40                                                 | 32                                              |
| 3                 | 4                                                 | 0.7                       | 1.8                         | 12.3                     | 256                             | 4.61                                     | 5.88                                     | 0.295                         | 0.093                                     | 5.879                                          | 0.56                                           | 52                                                 | 42                                              |
| 3                 | 6                                                 | 0.7                       | 1.8                         | 13.6                     | 340                             | 3.08                                     | 3.93                                     | 0.281                         | 0.088                                     | 3.928                                          | 0.85                                           | 64                                                 | 53                                              |
| 3                 | 10                                                | 0.7                       | 1.8                         | 15.5                     | 490                             | 1.83                                     | 2.33                                     | 0.266                         | 0.084                                     | 2.335                                          | 1.41                                           | 86                                                 | 73                                              |
| 3                 | 16                                                | 0.7                       | 1.8                         | 17.7                     | 698                             | 1.15                                     | 1.47                                     | 0.255                         | 0.080                                     | 1.469                                          | 2.26                                           | 111                                                | 96                                              |
| 3                 | 25                                                | 0.9                       | 1.8                         | 21.3                     | 1047                            | 0.727                                    | 0.927                                    | 0.255                         | 0.080                                     | 0.930                                          | 3.53                                           | 143                                                | 130                                             |
| 3                 | 35                                                | 0.9                       | 1.8                         | 23.8                     | 1388                            | 0.524                                    | 0.668                                    | 0.248                         | 0.078                                     | 0.673                                          | 4.95                                           | 173                                                | 160                                             |
| 3                 | 50                                                | 1.0                       | 1.8                         | 27.1                     | 1825                            | 0.387                                    | 0.493                                    | 0.245                         | 0.077                                     | 0.499                                          | 7.07                                           | 205                                                | 195                                             |
| 3                 | 70                                                | 1.1                       | 1.9                         | 31.6                     | 2562                            | 0.268                                    | 0.342                                    | 0.242                         | 0.076                                     | 0.268                                          | 9.90                                           | 252                                                | 247                                             |
| 3                 | 95                                                | 1.1                       | 2.0                         | 35.8                     | 3436                            | 0.193                                    | 0.25                                     | 0.236                         | 0.074                                     | 0.257                                          | 13.44                                          | 303                                                | 305                                             |
| 4                 | 1.5                                               | 0.7                       | 1.8                         | 11.1                     | 182                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 30                                                 | 24                                              |
| 4                 | 2.5                                               | 0.7                       | 1.8                         | 12.1                     | 235                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                           | 40                                                 | 32                                              |
| 4                 | 4                                                 | 0.7                       | 1.8                         | 13.3                     | 311                             | 4.61                                     | 5.88                                     | 0.295                         | 0.093                                     | 5.879                                          | 0.56                                           | 52                                                 | 42                                              |
| 4                 | 6                                                 | 0.7                       | 1.8                         | 14.7                     | 416                             | 3.08                                     | 3.93                                     | 0.281                         | 0.088                                     | 3.928                                          | 0.85                                           | 64                                                 | 53                                              |
| 4                 | 10                                                | 0.7                       | 1.8                         | 16.9                     | 611                             | 1.83                                     | 2.33                                     | 0.266                         | 0.084                                     | 2.335                                          | 1.41                                           | 86                                                 | 73                                              |
| 4                 | 16                                                | 0.7                       | 1.8                         | 19.4                     | 881                             | 1.15                                     | 1.47                                     | 0.255                         | 0.080                                     | 1.469                                          | 2.26                                           | 111                                                | 96                                              |
| 4                 | 25                                                | 0.9                       | 1.8                         | 23.4                     | 1326                            | 0.727                                    | 0.927                                    | 0.255                         | 0.080                                     | 0.930                                          | 3.53                                           | 143                                                | 130                                             |
| 4                 | 35                                                | 0.9                       | 1.8                         | 26.1                     | 1769                            | 0.524                                    | 0.668                                    | 0.248                         | 0.078                                     | 0.673                                          | 4.95                                           | 173                                                | 160                                             |
| 4                 | 50                                                | 1.0                       | 1.8                         | 29.9                     | 2330                            | 0.387                                    | 0.493                                    | 0.245                         | 0.077                                     | 0.499                                          | 7.07                                           | 205                                                | 195                                             |
| 4                 | 70                                                | 1.1                       | 2.0                         | 35.0                     | 3286                            | 0.268                                    | 0.342                                    | 0.242                         | 0.076                                     | 0.268                                          | 9.90                                           | 252                                                | 247                                             |
| 4                 | 95                                                | 1.1                       | 2.1                         | 39.6                     | 4411                            | 0.193                                    | 0.25                                     | 0.236                         | 0.074                                     | 0.257                                          | 13.44                                          | 303                                                | 305                                             |
| 5                 | 1.5                                               | 0.7                       | 1.8                         | 12.1                     | 200                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 21                                                 | 18                                              |
| 5                 | 2.5                                               | 0.7                       | 1.8                         | 13.2                     | 256                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                           | 28                                                 | 24                                              |
| 5                 | 4                                                 | 0.7                       | 1.8                         | 14.6                     | 342                             | 4.61                                     | 5.88                                     | 0.295                         | 0.093                                     | 5.879                                          | 0.56                                           | 36                                                 | 31                                              |
| 5                 | 6                                                 | 0.7                       | 1.8                         | 16.2                     | 460                             | 3.08                                     | 3.93                                     | 0.281                         | 0.088                                     | 3.928                                          | 0.85                                           | 45                                                 | 39                                              |
| 5                 | 10                                                | 0.7                       | 1.8                         | 18.6                     | 675                             | 1.83                                     | 2.33                                     | 0.266                         | 0.084                                     | 2.335                                          | 1.41                                           | 60                                                 | 54                                              |
| 5                 | 16                                                | 0.7                       | 1.8                         | 21.4                     | 978                             | 1.15                                     | 1.47                                     | 0.255                         | 0.080                                     | 1.469                                          | 2.26                                           | 77                                                 | 72                                              |
| 5                 | 25                                                | 0.9                       | 1.8                         | 25.9                     | 1474                            | 0.727                                    | 0.927                                    | 0.255                         | 0.080                                     | 0.930                                          | 3.53                                           | 100                                                | 97                                              |
| 5                 | 35                                                | 0.9                       | 1.8                         | 29.0                     | 1967                            | 0.524                                    | 0.668                                    | 0.248                         | 0.078                                     | 0.673                                          | 4.95                                           | 121                                                | 120                                             |
| 5                 | 50                                                | 1.0                       | 1.9                         | 33.4                     | 2606                            | 0.387                                    | 0.493                                    | 0.245                         | 0.077                                     | 0.499                                          | 7.07                                           | 143                                                | 146                                             |
| 6                 | 1.5                                               | 0.7                       | 1.8                         | 13.0                     | 228                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 30                                                 | 24                                              |
| 7                 | 1.5                                               | 0.7                       | 1.8                         | 13.0                     | 244                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 18                                                 | 15                                              |
| 8                 | 1.5                                               | 0.7                       | 1.8                         | 14.4                     | 278                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 18                                                 | 15                                              |
| 10                | 1.5                                               | 0.7                       | 1.8                         | 16.1                     | 333                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 15                                                 | 13                                              |
| 12                | 1.5                                               | 0.7                       | 1.8                         | 16.6                     | 391                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 15                                                 | 13                                              |
| 14                | 1.5                                               | 0.7                       | 1.8                         | 17.4                     | 428                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 13                                                 | 12                                              |
| 15                | 1.5                                               | 0.7                       | 1.8                         | 18.3                     | 456                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 13                                                 | 12                                              |
| 16                | 1.5                                               | 0.7                       | 1.8                         | 18.3                     | 476                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 13                                                 | 12                                              |
| 18                | 1.5                                               | 0.7                       | 1.8                         | 19.2                     | 527                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 13                                                 | 12                                              |
| 19                | 1.5                                               | 0.7                       | 1.8                         | 19.2                     | 543                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                           | 12                                                 | 10                                              |

| No Of Core (Nos.) | Conductor Cross Sectional Area (mm <sup>2</sup> ) | Insulation Thickness (mm) | Outer Sheath Thickness (mm) | Approx Over-All Dia. (mm) | Approx. Weight Of Cable (Kg/Km) | Dc Cond. Res. At 20 Deg. C Max. (Ohm/Km) | Ac Cond. Res. At 90 Deg. C Max. (Ohm/Km) | Inductance At 50 60Hz (mH/Km) | Inductive Reactance At 50 - 60Hz (Ohm/Km) | Impedance At 50 - 60Hz & At 90 Deg. C (Ohm/Km) | Cond. Short Circuit Current Rating (kAmp/Sec) | *Current Carrying Capacity At 20 °C In Ground Amp. | *Current Carrying Capacity At 30 °C In Air Amp. |
|-------------------|---------------------------------------------------|---------------------------|-----------------------------|---------------------------|---------------------------------|------------------------------------------|------------------------------------------|-------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| 20                | 1.5                                               | 0.7                       | 1.8                         | 20.2                      | 572                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 12                                                 | 10                                              |
| 22                | 1.5                                               | 0.7                       | 1.8                         | 21.3                      | 632                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 12                                                 | 10                                              |
| 24                | 1.5                                               | 0.7                       | 1.8                         | 22.3                      | 672                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 25                | 1.5                                               | 0.7                       | 1.8                         | 22.3                      | 693                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 26                | 1.5                                               | 0.7                       | 1.8                         | 22.3                      | 714                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 30                | 1.5                                               | 0.7                       | 1.8                         | 23.6                      | 806                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 32                | 1.5                                               | 0.7                       | 1.8                         | 24.4                      | 854                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 35                | 1.5                                               | 0.7                       | 1.8                         | 25.4                      | 925                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 36                | 1.5                                               | 0.7                       | 1.8                         | 25.4                      | 939                             | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 10                                                 | 9                                               |
| 40                | 1.5                                               | 0.7                       | 1.8                         | 26.4                      | 1032                            | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 9                                                  | 8                                               |
| 50                | 1.5                                               | 0.7                       | 1.8                         | 29.5                      | 1254                            | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 9                                                  | 8                                               |
| 61                | 1.5                                               | 0.7                       | 1.9                         | 31.8                      | 1513                            | 12.1                                     | 15.43                                    | 0.336                         | 0.106                                     | 15.43                                          | 0.21                                          | 7                                                  | 7                                               |
| 6                 | 2.5                                               | 0.7                       | 1.8                         | 14.3                      | 298                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 28                                                 | 24                                              |
| 7                 | 2.5                                               | 0.7                       | 1.8                         | 14.3                      | 324                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 24                                                 | 21                                              |
| 8                 | 2.5                                               | 0.7                       | 1.8                         | 15.9                      | 369                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 24                                                 | 21                                              |
| 10                | 2.5                                               | 0.7                       | 1.8                         | 17.8                      | 445                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 20                                                 | 17                                              |
| 12                | 2.5                                               | 0.7                       | 1.8                         | 18.3                      | 520                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 20                                                 | 17                                              |
| 14                | 2.5                                               | 0.7                       | 1.8                         | 19.2                      | 587                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 18                                                 | 16                                              |
| 15                | 2.5                                               | 0.7                       | 1.8                         | 20.2                      | 614                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 18                                                 | 16                                              |
| 16                | 2.5                                               | 0.7                       | 1.8                         | 20.2                      | 643                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 18                                                 | 16                                              |
| 18                | 2.5                                               | 0.7                       | 1.8                         | 21.3                      | 718                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 18                                                 | 16                                              |
| 19                | 2.5                                               | 0.7                       | 1.8                         | 21.3                      | 744                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 16                                                 | 14                                              |
| 20                | 2.5                                               | 0.7                       | 1.8                         | 22.5                      | 787                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 16                                                 | 14                                              |
| 22                | 2.5                                               | 0.7                       | 1.8                         | 23.6                      | 851                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 16                                                 | 14                                              |
| 24                | 2.5                                               | 0.7                       | 1.8                         | 24.8                      | 923                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 25                | 2.5                                               | 0.7                       | 1.8                         | 24.8                      | 953                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 26                | 2.5                                               | 0.7                       | 1.8                         | 24.8                      | 984                             | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 30                | 2.5                                               | 0.7                       | 1.8                         | 26.2                      | 1111                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 32                | 2.5                                               | 0.7                       | 1.8                         | 27.3                      | 1184                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 35                | 2.5                                               | 0.7                       | 1.8                         | 28.3                      | 1278                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 36                | 2.5                                               | 0.7                       | 1.8                         | 28.3                      | 1307                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 14                                                 | 12                                              |
| 40                | 2.5                                               | 0.7                       | 1.8                         | 29.5                      | 1438                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 12                                                 | 11                                              |
| 50                | 2.5                                               | 0.7                       | 1.9                         | 33.3                      | 1781                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 12                                                 | 11                                              |
| 61                | 2.5                                               | 0.7                       | 2.0                         | 35.7                      | 2143                            | 7.41                                     | 9.45                                     | 0.314                         | 0.099                                     | 9.449                                          | 0.35                                          | 10                                                 | 9                                               |

\*More detail please refers the "Technical Information" Section.

\* Not Applicable for single core cable

Note: Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

Sector shape conductor cable is available from 25mm<sup>2</sup>



## POWER & CONTROL, MULTI CORE, ARMORED CABLE

CU/ XLPE/PVC/SWA/PVC SPECIFICATION: IEC 60502-1



### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground location under mechanical stresses in the power and switching station, local distribution system, industrial plant and commercial building.

### CONSTRUCTION

|                       |                                                                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor             | Stranded annealed plain circular copper to Class 2 of IEC 60228.                                                                                                                   |
| Insulation            | Cross linked Polyethylene (XLPE) to IEC 60502-1                                                                                                                                    |
| Color Code            | Two Core - Red & Black<br>Three Core- Red, Yellow & Blue<br>Four Core - Red, Yellow, Blue & Black<br>Five & above Core - Black cores with Number printing                          |
| Cabling               | Cores are assembled in a concentric layer with filler (if necessary) for up to 4 Cores. Assembly with 5 cores or more is wrapped with a polyester tape with filler (if necessary). |
| Inner Sheath          | Flame Retardant PVC Compatible to Conductor Operating Temperature In Black Color.                                                                                                  |
| Wire Armor            | A single layer of galvanized steel wire armor to BS EN 10257-1 is applied over the Inner sheath.                                                                                   |
| Over sheath           | Flame retardant PVC Type ST-2 as per IEC 60502-1 and confirming to IEC 60332-1.The color of the sheath shall be Black. Other sheath colors are also available on request.          |
| Marking on the sheath | CU/XLPE/SWA/PVC NO OF CORES C X...MM2 600/1000V MESC YEAR IEC 60502-1 LENGTH METER MARKING                                                                                         |

### TECHNICAL DATA

|                              |                             |
|------------------------------|-----------------------------|
| Temperature Range            | - 5°C to 90°C               |
| Voltage Rating               | 600/1000 V                  |
| Voltage Withstand (V/Minute) | 3500 RMS / 5 or 8400 DC / 5 |
| Min. Bending Radius (mm)     | 12 X Cable Overall Diameter |
| Max Short Circuit Temp (°C)  | 250 (for 5 Second Maximum)  |

TABLE

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH<br>THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | ARMOR WIRE DIA.<br>(mm) | DIA. OVER ARMOR<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE<br>(kg/km) | DC Cond. Res. at 20 Deg. C<br>Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C<br>Max. (Ohm/Km) | Inductance at 50<br>60Hz (miliH/km) | Inductive Reactance at 50 -<br>60Hz (Ohm/Km) | Impedance at 50 - 60Hz & at<br>90 Deg. C (Ohm/Km) | Cond. Short Circuit current<br>Rating (Kamp/Sec) | *CURRENT CARRYING CAPACITY<br>AT 20 °C IN GROUND Amp. | *CURRENT CARRYING CAPACITY<br>AT 30 °C IN<br>AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|--------------------------------|--------------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------|------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| 2                    | 1.5                                                  | 0.7                          | 1.0                            | 8.4                            | 0.9                     | 10.2                    | 1.8                            | 13.8                        | 353                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 37                                                    | 26                                                    |
| 2                    | 2.5                                                  | 0.7                          | 1.0                            | 9.2                            | 0.9                     | 11.0                    | 1.8                            | 14.6                        | 400                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 49                                                    | 35                                                    |
| 2                    | 4                                                    | 0.7                          | 1.0                            | 10.2                           | 0.9                     | 12.0                    | 1.8                            | 15.6                        | 467                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 67                                                    | 46                                                    |
| 2                    | 6                                                    | 0.7                          | 1.0                            | 11.4                           | 0.9                     | 13.2                    | 1.8                            | 16.8                        | 559                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 78                                                    | 59                                                    |
| 2                    | 10                                                   | 0.7                          | 1.0                            | 13.2                           | 1.25                    | 15.7                    | 1.8                            | 19.3                        | 808                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 103                                                   | 80                                                    |
| 2                    | 16                                                   | 0.7                          | 1.0                            | 15.3                           | 1.25                    | 17.8                    | 1.8                            | 21.4                        | 1020                               | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 131                                                   | 107                                                   |
| 2                    | 25                                                   | 0.9                          | 1.0                            | 18.6                           | 1.6                     | 21.8                    | 1.8                            | 25.4                        | 1518                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 168                                                   | 145                                                   |
| 2                    | 35                                                   | 0.9                          | 1.0                            | 20.9                           | 1.6                     | 24.1                    | 1.8                            | 27.7                        | 1850                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 199                                                   | 177                                                   |
| 2                    | 50                                                   | 1.0                          | 1.0                            | 24.0                           | 1.6                     | 27.2                    | 1.8                            | 30.8                        | 2284                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 238                                                   | 216                                                   |
| 2                    | 70                                                   | 1.1                          | 1.0                            | 27.9                           | 1.6                     | 31.1                    | 2.0                            | 35.1                        | 2991                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 292                                                   | 274                                                   |
| 2                    | 95                                                   | 1.1                          | 1.2                            | 32.0                           | 2.0                     | 36.0                    | 2.1                            | 40.2                        | 4071                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 349                                                   | 339                                                   |
| 3                    | 1.5                                                  | 0.7                          | 1.0                            | 8.9                            | 0.9                     | 10.7                    | 1.8                            | 14.3                        | 382                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                    | 24                                                    |
| 3                    | 2.5                                                  | 0.7                          | 1.0                            | 9.8                            | 0.9                     | 11.6                    | 1.8                            | 15.2                        | 444                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                    | 32                                                    |
| 3                    | 4                                                    | 0.7                          | 1.0                            | 10.9                           | 0.9                     | 12.7                    | 1.8                            | 16.3                        | 526                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                    | 42                                                    |
| 3                    | 6                                                    | 0.7                          | 1.0                            | 12.2                           | 0.9                     | 14.0                    | 1.8                            | 17.6                        | 638                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                    | 53                                                    |
| 3                    | 10                                                   | 0.7                          | 1.0                            | 14.1                           | 1.25                    | 16.6                    | 1.8                            | 20.2                        | 932                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                    | 73                                                    |
| 3                    | 16                                                   | 0.7                          | 1.0                            | 16.3                           | 1.25                    | 18.8                    | 1.8                            | 22.4                        | 1203                               | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 111                                                   | 96                                                    |
| 3                    | 25                                                   | 0.9                          | 1.0                            | 19.9                           | 1.6                     | 23.1                    | 1.8                            | 26.7                        | 1788                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 143                                                   | 130                                                   |
| 3                    | 35                                                   | 0.9                          | 1.0                            | 22.4                           | 1.6                     | 25.6                    | 1.8                            | 29.2                        | 2209                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 173                                                   | 160                                                   |
| 3                    | 50                                                   | 1.0                          | 1.0                            | 25.7                           | 1.6                     | 28.9                    | 1.9                            | 32.7                        | 2778                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 205                                                   | 195                                                   |
| 3                    | 70                                                   | 1.1                          | 1.2                            | 30.4                           | 2.0                     | 34.4                    | 2.0                            | 38.4                        | 3958                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 252                                                   | 247                                                   |
| 3                    | 95                                                   | 1.1                          | 1.2                            | 34.4                           | 2.0                     | 38.4                    | 2.2                            | 42.8                        | 5013                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 303                                                   | 305                                                   |
| 4                    | 1.5                                                  | 0.7                          | 1.0                            | 9.7                            | 0.9                     | 11.5                    | 1.8                            | 15.1                        | 425                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                    | 24                                                    |
| 4                    | 2.5                                                  | 0.7                          | 1.0                            | 10.7                           | 0.9                     | 12.5                    | 1.8                            | 16.1                        | 499                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                    | 32                                                    |
| 4                    | 4                                                    | 0.7                          | 1.0                            | 11.9                           | 0.9                     | 13.7                    | 1.8                            | 17.3                        | 602                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                    | 42                                                    |
| 4                    | 6                                                    | 0.7                          | 1.0                            | 13.3                           | 1.25                    | 15.8                    | 1.8                            | 19.4                        | 834                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                    | 53                                                    |
| 4                    | 10                                                   | 0.7                          | 1.0                            | 15.5                           | 1.25                    | 18.0                    | 1.8                            | 21.6                        | 1091                               | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                    | 73                                                    |
| 4                    | 16                                                   | 0.7                          | 1.0                            | 18.0                           | 1.6                     | 21.2                    | 1.8                            | 24.8                        | 1562                               | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 111                                                   | 96                                                    |
| 4                    | 25                                                   | 0.9                          | 1.0                            | 22.0                           | 1.6                     | 25.2                    | 1.8                            | 28.8                        | 2144                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 143                                                   | 130                                                   |
| 4                    | 35                                                   | 0.9                          | 1.0                            | 24.7                           | 1.6                     | 27.9                    | 1.9                            | 31.7                        | 2674                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 173                                                   | 160                                                   |
| 4                    | 50                                                   | 1.0                          | 1.0                            | 28.5                           | 1.6                     | 31.7                    | 2.0                            | 35.7                        | 3399                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 205                                                   | 195                                                   |
| 4                    | 70                                                   | 1.1                          | 1.2                            | 33.6                           | 2.0                     | 37.6                    | 2.1                            | 41.8                        | 4811                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 252                                                   | 247                                                   |
| 4                    | 95                                                   | 1.1                          | 1.2                            | 38.0                           | 2.0                     | 42.0                    | 2.3                            | 46.6                        | 6171                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 303                                                   | 305                                                   |
| 5                    | 1.5                                                  | 0.7                          | 1.0                            | 10.7                           | 0.9                     | 12.5                    | 1.8                            | 16.1                        | 464                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 21                                                    | 18                                                    |
| 5                    | 2.5                                                  | 0.7                          | 1.0                            | 11.8                           | 0.9                     | 13.6                    | 1.8                            | 17.2                        | 546                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 28                                                    | 24                                                    |
| 5                    | 4                                                    | 0.7                          | 1.0                            | 13.2                           | 1.25                    | 15.7                    | 1.8                            | 19.3                        | 760                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 36                                                    | 31                                                    |
| 5                    | 6                                                    | 0.7                          | 1.0                            | 14.8                           | 1.25                    | 17.3                    | 1.8                            | 20.9                        | 916                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 45                                                    | 39                                                    |
| 5                    | 10                                                   | 0.7                          | 1.0                            | 17.2                           | 1.25                    | 19.7                    | 1.8                            | 23.3                        | 1204                               | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 60                                                    | 54                                                    |
| 5                    | 16                                                   | 0.7                          | 1.0                            | 20.0                           | 1.6                     | 23.2                    | 1.8                            | 26.8                        | 1719                               | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 77                                                    | 72                                                    |
| 5                    | 25                                                   | 0.9                          | 1.0                            | 24.5                           | 1.6                     | 27.7                    | 1.8                            | 31.3                        | 2372                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 100                                                   | 97                                                    |
| 5                    | 35                                                   | 0.9                          | 1.0                            | 27.6                           | 1.6                     | 30.8                    | 1.9                            | 34.6                        | 2997                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 121                                                   | 120                                                   |
| 5                    | 50                                                   | 1.0                          | 1.2                            | 32.2                           | 2.0                     | 36.2                    | 2.1                            | 40.4                        | 4086                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 143                                                   | 146                                                   |
| 6                    | 1.5                                                  | 0.7                          | 1.0                            | 11.6                           | 0.9                     | 13.4                    | 1.8                            | 17.0                        | 512                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                    | 24                                                    |
| 7                    | 1.5                                                  | 0.7                          | 1.0                            | 11.6                           | 0.9                     | 13.4                    | 1.8                            | 17.0                        | 528                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 18                                                    | 15                                                    |
| 8                    | 1.5                                                  | 0.7                          | 1.0                            | 13.0                           | 1.25                    | 15.5                    | 1.8                            | 19.1                        | 684                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 18                                                    | 15                                                    |
| 10                   | 1.5                                                  | 0.7                          | 1.0                            | 14.7                           | 1.25                    | 17.2                    | 1.8                            | 20.8                        | 789                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 15                                                    | 13                                                    |
| 12                   | 1.5                                                  | 0.7                          | 1.0                            | 15.2                           | 1.25                    | 17.7                    | 1.8                            | 21.3                        | 860                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 15                                                    | 13                                                    |
| 14                   | 1.5                                                  | 0.7                          | 1.0                            | 16.0                           | 1.25                    | 18.5                    | 1.8                            | 22.1                        | 918                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                    | 12                                                    |

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH<br>THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | ARMOR WIRE DIA.<br>(mm) | DIA. OVER ARMOR<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE<br>(kg/km) | DC Cond. Res. at 20 Deg. C<br>Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C<br>Max. (Ohm/Km) | Inductance at 50<br>60Hz (miliH/Km) | Inductive Reactance at 50 -<br>60Hz (Ohm/Km) | Impedance at 50 - 60Hz & at<br>90 Deg. C (Ohm/Km) | Cond. Short Circuit current<br>Rating (Kamp/Sec) | *CURRENT CARRYING CAPACITY<br>AT 20 °C IN GROUND Amp. | *CURRENT CARRYING CAPACITY<br>AT 30 °C IN<br>AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|--------------------------------|--------------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------|------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| 15                   | 1.5                                                  | 0.7                          | 1.0                            | 16.9                           | 1.25                    | 19.4                    | 1.8                            | 23.0                        | 974                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                    | 12                                                    |
| 16                   | 1.5                                                  | 0.7                          | 1.0                            | 16.9                           | 1.25                    | 19.4                    | 1.8                            | 23.0                        | 994                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                    | 12                                                    |
| 18                   | 1.5                                                  | 0.7                          | 1.0                            | 17.8                           | 1.25                    | 20.3                    | 1.8                            | 23.9                        | 1070                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                    | 12                                                    |
| 19                   | 1.5                                                  | 0.7                          | 1.0                            | 17.8                           | 1.25                    | 20.3                    | 1.8                            | 23.9                        | 1086                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                    | 10                                                    |
| 20                   | 1.5                                                  | 0.7                          | 1.0                            | 18.8                           | 1.6                     | 22.0                    | 1.8                            | 25.6                        | 1274                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                    | 10                                                    |
| 22                   | 1.5                                                  | 0.7                          | 1.0                            | 19.9                           | 1.6                     | 23.1                    | 1.8                            | 26.7                        | 1359                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                    | 10                                                    |
| 24                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 1.6                     | 24.1                    | 1.8                            | 27.7                        | 1451                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 25                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 1.6                     | 24.1                    | 1.8                            | 27.7                        | 1472                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 26                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 1.6                     | 24.1                    | 1.8                            | 27.7                        | 1493                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 30                   | 1.5                                                  | 0.7                          | 1.0                            | 22.2                           | 1.6                     | 25.4                    | 1.8                            | 29.0                        | 1625                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 32                   | 1.5                                                  | 0.7                          | 1.0                            | 23.0                           | 1.6                     | 26.2                    | 1.8                            | 29.8                        | 1696                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 35                   | 1.5                                                  | 0.7                          | 1.0                            | 24.0                           | 1.6                     | 27.2                    | 1.8                            | 30.8                        | 1790                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 36                   | 1.5                                                  | 0.7                          | 1.0                            | 24.0                           | 1.6                     | 27.2                    | 1.8                            | 30.8                        | 1818                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                    | 9                                                     |
| 40                   | 1.5                                                  | 0.7                          | 1.0                            | 25.0                           | 1.6                     | 28.2                    | 1.9                            | 32.0                        | 1950                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                     | 8                                                     |
| 50                   | 1.5                                                  | 0.7                          | 1.0                            | 28.1                           | 1.6                     | 31.3                    | 2.0                            | 35.3                        | 2306                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                     | 8                                                     |
| 61                   | 1.5                                                  | 0.7                          | 1.2                            | 30.6                           | 2.0                     | 34.6                    | 2.1                            | 38.8                        | 2930                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 7                                                     | 7                                                     |
| 6                    | 2.5                                                  | 0.7                          | 1.0                            | 12.9                           | 1.25                    | 15.4                    | 1.8                            | 19.0                        | 704                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 28                                                    | 24                                                    |
| 7                    | 2.5                                                  | 0.7                          | 1.0                            | 12.9                           | 1.25                    | 15.4                    | 1.8                            | 19.0                        | 730                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 24                                                    | 21                                                    |
| 8                    | 2.5                                                  | 0.7                          | 1.0                            | 14.5                           | 1.25                    | 17.0                    | 1.8                            | 20.6                        | 824                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 24                                                    | 21                                                    |
| 10                   | 2.5                                                  | 0.7                          | 1.0                            | 16.4                           | 1.25                    | 18.9                    | 1.8                            | 22.5                        | 950                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 20                                                    | 17                                                    |
| 12                   | 2.5                                                  | 0.7                          | 1.0                            | 16.9                           | 1.25                    | 19.4                    | 1.8                            | 23.0                        | 1037                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 20                                                    | 17                                                    |
| 14                   | 2.5                                                  | 0.7                          | 1.0                            | 17.8                           | 1.25                    | 20.3                    | 1.8                            | 23.9                        | 1116                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                    | 16                                                    |
| 15                   | 2.5                                                  | 0.7                          | 1.0                            | 18.8                           | 1.6                     | 22.0                    | 1.8                            | 25.6                        | 1315                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                    | 16                                                    |
| 16                   | 2.5                                                  | 0.7                          | 1.0                            | 18.8                           | 1.6                     | 22.0                    | 1.8                            | 25.6                        | 1345                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                    | 16                                                    |
| 18                   | 2.5                                                  | 0.7                          | 1.0                            | 19.9                           | 1.6                     | 23.1                    | 1.8                            | 26.7                        | 1459                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                    | 16                                                    |
| 19                   | 2.5                                                  | 0.7                          | 1.0                            | 19.9                           | 1.6                     | 23.1                    | 1.8                            | 26.7                        | 1485                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                    | 14                                                    |
| 20                   | 2.5                                                  | 0.7                          | 1.0                            | 21.1                           | 1.6                     | 24.3                    | 1.8                            | 27.9                        | 1567                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                    | 14                                                    |
| 22                   | 2.5                                                  | 0.7                          | 1.0                            | 22.2                           | 1.6                     | 25.4                    | 1.8                            | 29.0                        | 1664                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                    | 14                                                    |
| 24                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 1.6                     | 26.6                    | 1.8                            | 30.2                        | 1781                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 25                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 1.6                     | 26.6                    | 1.8                            | 30.2                        | 1812                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 26                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 1.6                     | 26.6                    | 1.8                            | 30.2                        | 1842                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 30                   | 2.5                                                  | 0.7                          | 1.0                            | 24.8                           | 1.6                     | 28.0                    | 1.9                            | 31.8                        | 2042                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 32                   | 2.5                                                  | 0.7                          | 1.0                            | 25.9                           | 1.6                     | 29.1                    | 1.9                            | 32.9                        | 2146                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 35                   | 2.5                                                  | 0.7                          | 1.0                            | 26.9                           | 1.6                     | 30.1                    | 1.9                            | 33.9                        | 2262                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 36                   | 2.5                                                  | 0.7                          | 1.0                            | 26.9                           | 1.6                     | 30.1                    | 1.9                            | 33.9                        | 2299                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 40                   | 2.5                                                  | 0.7                          | 1.0                            | 28.1                           | 1.6                     | 31.3                    | 2.0                            | 35.3                        | 2479                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 12                                                    | 11                                                    |
| 50                   | 2.5                                                  | 0.7                          | 1.2                            | 32.1                           | 2.0                     | 36.1                    | 2.1                            | 40.3                        | 3252                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 12                                                    | 11                                                    |
| 61                   | 2.5                                                  | 0.7                          | 1.2                            | 34.3                           | 2.0                     | 38.3                    | 2.2                            | 42.7                        | 3718                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 10                                                    | 9                                                     |

\*Detail Please Refer the Technical Information Section.

Note: Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

Sector shape conductor cable is available from 25mm<sup>2</sup>



at the heart of every project

## POWER & CONTROL, MULTI CORE, SCREENED CABLE

CU/ XLPE/PVC/CUT/PVC SPECIFICATION: IEC 60502-1



### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground in power and switching station, local distribution system, industrial plant and commercial building.

### CONSTRUCTION

|                       |                                                                                                                                                                                    |
|-----------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor             | Stranded annealed plain circular copper to Class 2 of IEC 60228.                                                                                                                   |
| Insulation            | Cross linked Polyethylene (XLPE) to IEC 60502-1                                                                                                                                    |
| Color Code            | Two Core - Red & Black<br>Three Core- Red, Yellow & Blue<br>Four Core - Red, Yellow, Blue & Black<br>Five & above Core - Black cores with Number printing                          |
| Cabling               | Cores are assembled in a concentric layer with filler (if necessary) for up to 4 Cores. Assembly with 5 cores or more is wrapped with a polyester tape with filler (if necessary). |
| Inner Sheath          | Flame Retardant PVC Compatible to Conductor Operating Temperature In Black Color.                                                                                                  |
| Metallic Screen       | The screen shall consist of copper tape (50µm) applied helically over the inner covering for 100% coverage and with a suitable overlap.                                            |
| Over sheath           | Flame retardant PVC Type ST-2 as per IEC 60502-1 and confirming to IEC 60332-1. The color of the sheath shall be Black. Other sheath colors are also available on request.         |
| Marking on the sheath | CU/XLPE/PVC NO OF CORES C X...MM2 600/1000V MESC YEAR IEC 60502-1 LENGTH METER MARKING                                                                                             |

### TECHNICAL DATA

|                              |                             |
|------------------------------|-----------------------------|
| Temperature Range            | - 5°C to 90°C               |
| Voltage Rating               | 600/1000 V                  |
| Voltage Withstand (V/Minute) | 3500 RMS / 5 or 8400 DC / 5 |
| Min. Bending Radius (mm)     | 12 X Cable Overall Diameter |
| Max Short Circuit Temp [°C]  | 250 (for 5 Second Maximum)  |

**TABLE**

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH<br>THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | METALLIC SCREEN THICKNESS<br>(mm) | DIA. OVER METALLIC SCREEN<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE<br>(kg/km) | DC Cond. Res. at 20 Deg. C<br>Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C<br>Max. (Ohm/Km) | Inductance at 50<br>60Hz (miliH/Km) | Inductive Reactance at 50 -<br>60Hz (Ohm/Km) | Impedance at 50 - 60Hz & at<br>90 Deg. C (Ohm/Km) | Cond. Short Circuit current<br>Rating (kAmp/Sec) | *CURRENT CARRING CAPACITY<br>AT 20 °C IN GROUND Amp. | *CURRENT CARRING CAPACITY<br>AT 30 °C IN AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|--------------------------------|--------------------------------|-----------------------------------|-----------------------------------|--------------------------------|-----------------------------|------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------|---------------------------------------------------|
| 2                    | 1.5                                                  | 0.7                          | 1.0                            | 8.4                            | 0.05                              | 8.6                               | 1.8                            | 11.5                        | 187                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 37                                                   | 26                                                |
| 2                    | 2.5                                                  | 0.7                          | 1.0                            | 9.2                            | 0.05                              | 9.4                               | 1.8                            | 12.3                        | 223                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 49                                                   | 35                                                |
| 2                    | 4                                                    | 0.7                          | 1.0                            | 10.2                           | 0.05                              | 10.4                              | 1.8                            | 13.3                        | 275                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 67                                                   | 46                                                |
| 2                    | 6                                                    | 0.7                          | 1.0                            | 11.4                           | 0.05                              | 11.6                              | 1.8                            | 14.5                        | 346                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 78                                                   | 59                                                |
| 2                    | 10                                                   | 0.7                          | 1.0                            | 13.2                           | 0.05                              | 13.4                              | 1.8                            | 16.3                        | 471                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 103                                                  | 80                                                |
| 2                    | 16                                                   | 0.7                          | 1.0                            | 15.3                           | 0.05                              | 15.5                              | 1.8                            | 18.4                        | 642                                | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 131                                                  | 107                                               |
| 2                    | 25                                                   | 0.9                          | 1.0                            | 18.6                           | 0.05                              | 18.8                              | 1.8                            | 21.7                        | 925                                | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 168                                                  | 145                                               |
| 2                    | 35                                                   | 0.9                          | 1.0                            | 20.9                           | 0.05                              | 21.1                              | 1.8                            | 24.0                        | 1192                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 199                                                  | 177                                               |
| 2                    | 50                                                   | 1.0                          | 1.0                            | 24.0                           | 0.05                              | 24.2                              | 1.8                            | 27.1                        | 1544                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 238                                                  | 216                                               |
| 2                    | 70                                                   | 1.1                          | 1.0                            | 27.9                           | 0.05                              | 28.1                              | 1.9                            | 31.1                        | 2109                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 292                                                  | 274                                               |
| 2                    | 95                                                   | 1.1                          | 1.0                            | 31.6                           | 0.05                              | 31.8                              | 2.0                            | 35.0                        | 2779                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 349                                                  | 339                                               |
| 3                    | 1.5                                                  | 0.7                          | 1.0                            | 8.9                            | 0.05                              | 9.1                               | 1.8                            | 12.0                        | 210                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                   | 24                                                |
| 3                    | 2.5                                                  | 0.7                          | 1.0                            | 9.8                            | 0.05                              | 10.0                              | 1.8                            | 12.9                        | 257                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                   | 32                                                |
| 3                    | 4                                                    | 0.7                          | 1.0                            | 10.9                           | 0.05                              | 11.1                              | 1.8                            | 14.0                        | 323                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                   | 42                                                |
| 3                    | 6                                                    | 0.7                          | 1.0                            | 12.2                           | 0.05                              | 12.4                              | 1.8                            | 15.3                        | 415                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                   | 53                                                |
| 3                    | 10                                                   | 0.7                          | 1.0                            | 14.1                           | 0.05                              | 14.3                              | 1.8                            | 17.2                        | 574                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                   | 73                                                |
| 3                    | 16                                                   | 0.7                          | 1.0                            | 16.3                           | 0.05                              | 16.5                              | 1.8                            | 19.4                        | 794                                | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 111                                                  | 96                                                |
| 3                    | 25                                                   | 0.9                          | 1.0                            | 19.9                           | 0.05                              | 20.1                              | 1.8                            | 23.0                        | 1162                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 143                                                  | 130                                               |
| 3                    | 35                                                   | 0.9                          | 1.0                            | 22.4                           | 0.05                              | 22.6                              | 1.8                            | 25.5                        | 1518                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 173                                                  | 160                                               |
| 3                    | 50                                                   | 1.0                          | 1.0                            | 25.7                           | 0.05                              | 25.9                              | 1.8                            | 28.8                        | 1972                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 205                                                  | 195                                               |
| 3                    | 70                                                   | 1.1                          | 1.0                            | 30.0                           | 0.05                              | 30.2                              | 1.9                            | 33.2                        | 2724                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 252                                                  | 247                                               |
| 3                    | 95                                                   | 1.1                          | 1.0                            | 34.0                           | 0.05                              | 34.2                              | 2.0                            | 37.4                        | 3620                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 303                                                  | 305                                               |
| 4                    | 1.5                                                  | 0.7                          | 1.0                            | 9.7                            | 0.05                              | 9.9                               | 1.8                            | 12.7                        | 241                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                   | 24                                                |
| 4                    | 2.5                                                  | 0.7                          | 1.0                            | 10.7                           | 0.05                              | 10.9                              | 1.8                            | 13.7                        | 298                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                   | 32                                                |
| 4                    | 4                                                    | 0.7                          | 1.0                            | 11.9                           | 0.05                              | 12.1                              | 1.8                            | 15.0                        | 384                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                   | 42                                                |
| 4                    | 6                                                    | 0.7                          | 1.0                            | 13.3                           | 0.05                              | 13.5                              | 1.8                            | 16.4                        | 496                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                   | 53                                                |
| 4                    | 10                                                   | 0.7                          | 1.0                            | 15.5                           | 0.05                              | 15.7                              | 1.8                            | 18.6                        | 703                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                   | 73                                                |
| 4                    | 16                                                   | 0.7                          | 1.0                            | 18.0                           | 0.05                              | 18.2                              | 1.8                            | 21.0                        | 981                                | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 111                                                  | 96                                                |
| 4                    | 25                                                   | 0.9                          | 1.0                            | 22.0                           | 0.05                              | 22.2                              | 1.8                            | 25.0                        | 1447                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 143                                                  | 130                                               |
| 4                    | 35                                                   | 0.9                          | 1.0                            | 24.7                           | 0.05                              | 24.9                              | 1.8                            | 27.8                        | 1902                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 173                                                  | 160                                               |
| 4                    | 50                                                   | 1.0                          | 1.0                            | 28.5                           | 0.05                              | 28.7                              | 1.9                            | 31.7                        | 2499                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 205                                                  | 195                                               |
| 4                    | 70                                                   | 1.1                          | 1.0                            | 33.2                           | 0.05                              | 33.4                              | 2.0                            | 36.6                        | 3465                               | 0.268                                       | 0.342                                       | 0.242                               | 0.076                                        | 0.268                                             | 9.90                                             | 252                                                  | 247                                               |
| 4                    | 95                                                   | 1.1                          | 1.0                            | 37.6                           | 0.05                              | 37.8                              | 2.2                            | 41.4                        | 4634                               | 0.193                                       | 0.25                                        | 0.236                               | 0.074                                        | 0.257                                             | 13.44                                            | 303                                                  | 305                                               |
| 5                    | 1.5                                                  | 0.7                          | 1.0                            | 10.7                           | 0.05                              | 10.9                              | 1.8                            | 13.8                        | 266                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 21                                                   | 18                                                |
| 5                    | 2.5                                                  | 0.7                          | 1.0                            | 11.8                           | 0.05                              | 12.0                              | 1.8                            | 14.9                        | 328                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 28                                                   | 24                                                |
| 5                    | 4                                                    | 0.7                          | 1.0                            | 13.2                           | 0.05                              | 13.4                              | 1.8                            | 16.3                        | 422                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 36                                                   | 31                                                |
| 5                    | 6                                                    | 0.7                          | 1.0                            | 14.8                           | 0.05                              | 15.0                              | 1.8                            | 17.9                        | 548                                | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 45                                                   | 39                                                |
| 5                    | 10                                                   | 0.7                          | 1.0                            | 17.2                           | 0.05                              | 17.4                              | 1.8                            | 20.3                        | 776                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 60                                                   | 54                                                |
| 5                    | 16                                                   | 0.7                          | 1.0                            | 20.0                           | 0.05                              | 20.2                              | 1.8                            | 23.1                        | 1094                               | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 77                                                   | 72                                                |
| 5                    | 25                                                   | 0.9                          | 1.0                            | 24.5                           | 0.05                              | 24.7                              | 1.8                            | 27.6                        | 1614                               | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 100                                                  | 97                                                |
| 5                    | 35                                                   | 0.9                          | 1.0                            | 27.6                           | 0.05                              | 27.8                              | 1.8                            | 30.6                        | 2116                               | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 121                                                  | 120                                               |
| 5                    | 50                                                   | 1.0                          | 1.0                            | 31.8                           | 0.05                              | 32.0                              | 2.0                            | 35.2                        | 2795                               | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 143                                                  | 146                                               |
| 6                    | 1.5                                                  | 0.7                          | 1.0                            | 11.6                           | 0.05                              | 11.8                              | 1.8                            | 14.7                        | 299                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                   | 24                                                |
| 7                    | 1.5                                                  | 0.7                          | 1.0                            | 11.6                           | 0.05                              | 11.8                              | 1.8                            | 14.7                        | 315                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 18                                                   | 15                                                |
| 8                    | 1.5                                                  | 0.7                          | 1.0                            | 13.0                           | 0.05                              | 13.2                              | 1.8                            | 16.1                        | 356                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 18                                                   | 15                                                |
| 10                   | 1.5                                                  | 0.7                          | 1.0                            | 14.7                           | 0.05                              | 14.9                              | 1.8                            | 17.8                        | 421                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 15                                                   | 13                                                |

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| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH<br>THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | METALLIC SCREEN THICKNESS<br>(mm) | DIA. OVER METALLIC SCREEN<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE<br>(kg/km) | DC Cond. Res. at 20 Deg. C<br>Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C<br>Max. (Ohm/Km) | Inductance at 50<br>60Hz (miliH/Km) | Inductive Reactance at 50 -<br>60Hz (Ohm/Km) | Impedance at 50 - 60Hz & at<br>90 Deg. C (Ohm/Km) | Cond. Short Circuit current<br>Rating (Kamp/Sec) | *CURRENT CARRING CAPACITY<br>AT 20 °C IN GROUND Amp. | *CURRENT CARRING CAPACITY<br>AT 30 °C IN AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|--------------------------------|--------------------------------|-----------------------------------|-----------------------------------|--------------------------------|-----------------------------|------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------|---------------------------------------------------|
| 12                   | 1.5                                                  | 0.7                          | 1.0                            | 15.2                           | 0.05                              | 15.4                              | 1.8                            | 18.3                        | 482                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 15                                                   | 13                                                |
| 14                   | 1.5                                                  | 0.7                          | 1.0                            | 16.0                           | 0.05                              | 16.2                              | 1.8                            | 19.1                        | 523                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                   | 12                                                |
| 15                   | 1.5                                                  | 0.7                          | 1.0                            | 16.9                           | 0.05                              | 17.1                              | 1.8                            | 19.9                        | 551                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                   | 12                                                |
| 16                   | 1.5                                                  | 0.7                          | 1.0                            | 16.9                           | 0.05                              | 17.1                              | 1.8                            | 19.9                        | 571                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                   | 12                                                |
| 18                   | 1.5                                                  | 0.7                          | 1.0                            | 17.8                           | 0.05                              | 18.0                              | 1.8                            | 20.9                        | 631                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 13                                                   | 12                                                |
| 19                   | 1.5                                                  | 0.7                          | 1.0                            | 17.8                           | 0.05                              | 18.0                              | 1.8                            | 20.9                        | 647                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                   | 10                                                |
| 20                   | 1.5                                                  | 0.7                          | 1.0                            | 18.8                           | 0.05                              | 19.0                              | 1.8                            | 21.9                        | 682                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                   | 10                                                |
| 22                   | 1.5                                                  | 0.7                          | 1.0                            | 19.9                           | 0.05                              | 20.1                              | 1.8                            | 22.9                        | 742                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                   | 10                                                |
| 24                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 0.05                              | 21.1                              | 1.8                            | 24.0                        | 793                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 25                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 0.05                              | 21.1                              | 1.8                            | 24.0                        | 814                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 26                   | 1.5                                                  | 0.7                          | 1.0                            | 20.9                           | 0.05                              | 21.1                              | 1.8                            | 24.0                        | 834                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 30                   | 1.5                                                  | 0.7                          | 1.0                            | 22.2                           | 0.05                              | 22.4                              | 1.8                            | 25.2                        | 927                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 32                   | 1.5                                                  | 0.7                          | 1.0                            | 23.0                           | 0.05                              | 23.2                              | 1.8                            | 26.1                        | 986                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 35                   | 1.5                                                  | 0.7                          | 1.0                            | 24.0                           | 0.05                              | 24.2                              | 1.8                            | 27.1                        | 1063                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 36                   | 1.5                                                  | 0.7                          | 1.0                            | 24.0                           | 0.05                              | 24.2                              | 1.8                            | 27.1                        | 1079                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 10                                                   | 9                                                 |
| 40                   | 1.5                                                  | 0.7                          | 1.0                            | 25.0                           | 0.05                              | 25.2                              | 1.8                            | 28.1                        | 1175                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                    | 8                                                 |
| 50                   | 1.5                                                  | 0.7                          | 1.0                            | 28.1                           | 0.05                              | 28.3                              | 1.9                            | 31.4                        | 1428                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                    | 8                                                 |
| 61                   | 1.5                                                  | 0.7                          | 1.0                            | 30.2                           | 0.05                              | 30.4                              | 1.9                            | 33.4                        | 1676                               | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 7                                                    | 7                                                 |
| 6                    | 2.5                                                  | 0.7                          | 1.0                            | 12.9                           | 0.05                              | 13.1                              | 1.8                            | 16.0                        | 376                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 28                                                   | 24                                                |
| 7                    | 2.5                                                  | 0.7                          | 1.0                            | 12.9                           | 0.05                              | 13.1                              | 1.8                            | 16.0                        | 402                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 24                                                   | 21                                                |
| 8                    | 2.5                                                  | 0.7                          | 1.0                            | 14.5                           | 0.05                              | 14.7                              | 1.8                            | 17.5                        | 451                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 24                                                   | 21                                                |
| 10                   | 2.5                                                  | 0.7                          | 1.0                            | 16.4                           | 0.05                              | 16.6                              | 1.8                            | 19.5                        | 542                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 20                                                   | 17                                                |
| 12                   | 2.5                                                  | 0.7                          | 1.0                            | 16.9                           | 0.05                              | 17.1                              | 1.8                            | 20.0                        | 619                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 20                                                   | 17                                                |
| 14                   | 2.5                                                  | 0.7                          | 1.0                            | 17.8                           | 0.05                              | 18.0                              | 1.8                            | 20.9                        | 692                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                   | 16                                                |
| 15                   | 2.5                                                  | 0.7                          | 1.0                            | 18.8                           | 0.05                              | 19.0                              | 1.8                            | 21.9                        | 723                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                   | 16                                                |
| 16                   | 2.5                                                  | 0.7                          | 1.0                            | 18.8                           | 0.05                              | 19.0                              | 1.8                            | 21.9                        | 753                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                   | 16                                                |
| 18                   | 2.5                                                  | 0.7                          | 1.0                            | 19.9                           | 0.05                              | 20.1                              | 1.8                            | 23.0                        | 834                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 18                                                   | 16                                                |
| 19                   | 2.5                                                  | 0.7                          | 1.0                            | 19.9                           | 0.05                              | 20.1                              | 1.8                            | 23.0                        | 859                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                   | 14                                                |
| 20                   | 2.5                                                  | 0.7                          | 1.0                            | 21.1                           | 0.05                              | 21.3                              | 1.8                            | 24.1                        | 903                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                   | 14                                                |
| 22                   | 2.5                                                  | 0.7                          | 1.0                            | 22.2                           | 0.05                              | 22.4                              | 1.8                            | 25.3                        | 979                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                   | 14                                                |
| 24                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 0.05                              | 23.6                              | 1.8                            | 26.5                        | 1057                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 25                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 0.05                              | 23.6                              | 1.8                            | 26.5                        | 1087                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 26                   | 2.5                                                  | 0.7                          | 1.0                            | 23.4                           | 0.05                              | 23.6                              | 1.8                            | 26.5                        | 1118                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 30                   | 2.5                                                  | 0.7                          | 1.0                            | 24.8                           | 0.05                              | 25.0                              | 1.8                            | 27.9                        | 1253                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 32                   | 2.5                                                  | 0.7                          | 1.0                            | 25.9                           | 0.05                              | 26.1                              | 1.8                            | 28.9                        | 1324                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 35                   | 2.5                                                  | 0.7                          | 1.0                            | 26.9                           | 0.05                              | 27.1                              | 1.8                            | 30.0                        | 1431                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 36                   | 2.5                                                  | 0.7                          | 1.0                            | 26.9                           | 0.05                              | 27.1                              | 1.8                            | 30.0                        | 1462                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                   | 12                                                |
| 40                   | 2.5                                                  | 0.7                          | 1.0                            | 28.1                           | 0.05                              | 28.3                              | 1.9                            | 31.3                        | 1605                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 12                                                   | 11                                                |
| 50                   | 2.5                                                  | 0.7                          | 1.0                            | 31.7                           | 0.05                              | 31.9                              | 2.0                            | 35.1                        | 1968                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 12                                                   | 11                                                |
| 61                   | 2.5                                                  | 0.7                          | 1.0                            | 33.9                           | 0.05                              | 34.1                              | 2.1                            | 37.5                        | 2344                               | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 10                                                   | 9                                                 |

\*Detail Please Refer the Technical Information Section

Note: Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

## Middle East Specialized Cables Co.

POWER CABLE  
MULTI CORE, ARMORED FLAME RETARDANT  
CU/XLPE/PVC/GSWA/PVC  
SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

### CONSTRUCTION

|                                |                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>               | Circular stranded annealed plain Copper Class 2 to IEC 60228.                                                                                 |
| <b>Insulation</b>              | Cross linked polyethylene (XLPE) to IEC 60502-1.                                                                                              |
| <b>Color Code</b>              | 2C: Red & Black<br>3C: Red, Yellow & Blue<br>4C: Red, Yellow, Blue & Black                                                                    |
| <b>Cabling</b>                 | Cores are assembled in a concentric layer and laid up with non-hygroscopic Centre PP filler & assembly is wrapped with polyester binder tape. |
| <b>Inner Sheath</b>            | Extruded, Flame retardant PVC Type ST-2 to IEC 60502-1 in Black Color.                                                                        |
| <b>Armor</b>                   | A single layer of galvanized steel wire armor to EN 10257-1 is applied over the inner sheath.                                                 |
| <b>Outer Sheath</b>            | Flame retardant PVC Type ST-2 to IEC 60502-1. The color of the sheath shall be as per dimension sheet.                                        |
| <b>Embossing on the sheath</b> | CU/XLPE/PVC/GSWA/PVC NO OF CORES C X....MM2 600/1000V MESC YEAR IEC 60502-1 IEC 60332-3 CAT C ZERO PROGRESSIVE LENGTH METER MARKING           |

### Technical Data:

|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature</b>                    | -15°C to +90°C                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Voltage Rating</b>                           | 600/1000 Volts                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>DC Cond. Res. at 20 Deg. C Max. (Ohm/Km)</b> | 12.1(1.5mm <sup>2</sup> ), 7.41 (2.5mm <sup>2</sup> ), 4.61 (4mm <sup>2</sup> ), 3.08 (6mm <sup>2</sup> ), 1.83 (10mm <sup>2</sup> ), 1.15 (16mm <sup>2</sup> ), 0.727 (25mm <sup>2</sup> ), 0.524 (35mm <sup>2</sup> ), 0.387 (50mm <sup>2</sup> ), 0.268 (70mm <sup>2</sup> ), 0.193 (95mm <sup>2</sup> ), 0.153 (120mm <sup>2</sup> ), 0.124 (150mm <sup>2</sup> ), 0.0991 (185mm <sup>2</sup> ), 0.0754 (240mm <sup>2</sup> ), 0.0601 (300mm <sup>2</sup> ) |
| <b>Voltage Withstand (V/Minute)</b>             | 3500 V <sub>RMS</sub> / 5 or 8400 V <sub>DC</sub> / 5                                                                                                                                                                                                                                                                                                                                                                                                           |

### Flame Behavior Characteristics:

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| <b>Flame retardant</b>                      | IEC 60332-1 & IEC 60332-3 CAT C |
| <b>Halogen acid gas (outer sheath)</b>      | MAX. 17% ( IEC 60754-1)         |
| <b>Limiting Oxygen index (outer sheath)</b> | ≥ 30% (ASTM D2863)              |
| <b>Temperature Index</b>                    | ≥ 250°C (ASTM D2863)            |
| <b>UV Resistance (Outer Sheath)</b>         | ISO 4892 (500hrs.)              |
| <b>Oil Resistance (Outer Sheath)</b>        | IEC 60811-404                   |
| <b>Min. Bending Radius</b>                  | 12 X Cable Overall Diameter     |

# Middle East Specialized Cables Co.

POWER CABLE

MULTI CORE, ARMORED FLAME RETARDANT

CU/XLPE/PVC/GSWA/PVC

SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

## DIMENSIONAL DATA

| SR NO | MESC CODE              | OUTER SHEATH COLOR | NO OF CORES | SIZE (mm <sup>2</sup> ) | STRAND x DIA.<br>(n x mm) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA. (mm) | DIA. OVER ARMOR (mm) | OUTER SHEATH THICKNESS (mm) |      | APPROX. OVERALL DIA. (mm) | APPROX. CABLE WEIGHT (kg/km) |
|-------|------------------------|--------------------|-------------|-------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|------|---------------------------|------------------------------|
|       |                        |                    |             |                         |                           |                           |                             |                             |                      |                      | Nom.                        | Min. |                           |                              |
| 1     | 7614-02C00150-W0BK8-00 | Black              | 2C          | 1.5                     | 7x0.53                    | 0.7                       | 1.0                         | 8.2                         | 0.9                  | 10.0                 | 1.8                         | 1.24 | 13.2                      | 335                          |
| 2     | 7614-02C00250-W0BK8-00 | Black              | 2C          | 2.5                     | 7x0.67                    | 0.7                       | 1.0                         | 9.0                         | 0.9                  | 10.8                 | 1.8                         | 1.24 | 14.0                      | 375                          |
| 3     | 7614-02C00400-W0BK8-00 | Black              | 2C          | 4                       | 7x0.85                    | 0.7                       | 1.0                         | 10.0                        | 0.9                  | 11.8                 | 1.8                         | 1.24 | 15.0                      | 441                          |
| 4     | 7614-02C00600-W0BK8-00 | Black              | 2C          | 6                       | 7x1.04                    | 0.7                       | 1.0                         | 11.2                        | 0.9                  | 13.0                 | 1.8                         | 1.24 | 16.2                      | 531                          |
| 5     | 7614-02C01000-W0BK8-00 | Black              | 2C          | 10                      | 7x1.35                    | 0.7                       | 1.0                         | 13.0                        | 1.25                 | 15.5                 | 1.8                         | 1.24 | 18.7                      | 773                          |
| 6     | 7614-02C01600-W0BK8-00 | Black              | 2C          | 16                      | 7x1.7                     | 0.7                       | 1.0                         | 15.1                        | 1.25                 | 17.6                 | 1.8                         | 1.24 | 20.8                      | 992                          |
| 7     | 7614-02C02500-W0BK8-00 | Black              | 2C          | 25                      | 7x2.14                    | 0.9                       | 1.0                         | 18.4                        | 1.6                  | 21.6                 | 1.8                         | 1.24 | 24.8                      | 1468                         |
| 8     | 7614-02C03500-W0BK8-00 | Black              | 2C          | 35                      | 7x2.52                    | 0.9                       | 1.0                         | 20.7                        | 1.6                  | 23.9                 | 1.8                         | 1.24 | 27.1                      | 1797                         |
| 9     | 7614-02C05000-W0BK8-00 | Black              | 2C          | 50                      | 19x1.78                   | 1.0                       | 1.0                         | 23.8                        | 1.6                  | 27.0                 | 1.8                         | 1.24 | 30.2                      | 2243                         |
| 10    | 7614-02C07000-W0BK8-00 | Black              | 2C          | 70                      | 19x2.14                   | 1.1                       | 1.0                         | 27.7                        | 1.6                  | 30.9                 | 2.0                         | 1.40 | 34.5                      | 2944                         |
| 11    | 7614-02C09500-W0BK8-00 | Black              | 2C          | 95                      | 19x2.52                   | 1.1                       | 1.2                         | 31.8                        | 2.0                  | 35.8                 | 2.1                         | 1.48 | 39.6                      | 4017                         |
| 12    | 7614-02C12000-W0BK8-00 | Black              | 2C          | 120                     | 37x2.03                   | 1.2                       | 1.2                         | 35.36                       | 2.0                  | 39.36                | 2.2                         | 1.56 | 43.4                      | 4813                         |
| 13    | 7614-02C15000-W0BK8-00 | Black              | 2C          | 150                     | 37x2.25                   | 1.4                       | 1.2                         | 39.16                       | 2.0                  | 43.16                | 2.3                         | 1.64 | 47.2                      | 5674                         |
| 14    | 7614-02C18500-W0BK8-00 | Black              | 2C          | 185                     | 37x2.52                   | 1.6                       | 1.4                         | 44.14                       | 2.5                  | 49.14                | 2.5                         | 1.80 | 53.5                      | 7388                         |
| 15    | 7614-02C24000-W0BK8-00 | Black              | 2C          | 240                     | 37x2.87                   | 1.7                       | 1.4                         | 49.72                       | 2.5                  | 54.72                | 2.7                         | 1.96 | 59.5                      | 9173                         |
| 16    | 7614-02C30000-W0BK8-00 | Black              | 2C          | 300                     | 61x2.50                   | 1.8                       | 1.6                         | 54.9                        | 2.5                  | 59.9                 | 2.8                         | 2.04 | 64.7                      | 10862                        |
| 17    | 7614-03C00150-W0BK8-00 | Black              | 3C          | 1.5                     | 7x0.53                    | 0.7                       | 1.0                         | 8.7                         | 0.9                  | 10.5                 | 1.8                         | 1.24 | 13.7                      | 363                          |
| 18    | 7614-03C00250-W0BK8-00 | Black              | 3C          | 2.5                     | 7x0.67                    | 0.7                       | 1.0                         | 9.6                         | 0.9                  | 11.4                 | 1.8                         | 1.24 | 14.6                      | 419                          |
| 19    | 7614-03C00400-W0BK8-00 | Black              | 3C          | 4                       | 7x0.85                    | 0.7                       | 1.0                         | 10.7                        | 0.9                  | 12.5                 | 1.8                         | 1.24 | 15.7                      | 499                          |
| 20    | 7614-03C00600-W0BK8-00 | Black              | 3C          | 6                       | 7x1.04                    | 0.7                       | 1.0                         | 12.0                        | 0.9                  | 13.8                 | 1.8                         | 1.24 | 17.0                      | 609                          |
| 21    | 7614-03C01000-W0BK8-00 | Black              | 3C          | 10                      | 7x1.35                    | 0.7                       | 1.0                         | 13.9                        | 1.25                 | 16.4                 | 1.8                         | 1.24 | 19.6                      | 896                          |
| 22    | 7614-03C01600-W0BK8-00 | Black              | 3C          | 16                      | 7x1.7                     | 0.7                       | 1.0                         | 16.1                        | 1.25                 | 18.6                 | 1.8                         | 1.24 | 21.8                      | 1163                         |
| 23    | 7614-03C02500-W0BK8-00 | Black              | 3C          | 25                      | 7x2.14                    | 0.9                       | 1.0                         | 19.7                        | 1.6                  | 22.9                 | 1.8                         | 1.24 | 26.1                      | 1753                         |
| 24    | 7614-03C03500-W0BK8-00 | Black              | 3C          | 35                      | 7x2.52                    | 0.9                       | 1.0                         | 22.2                        | 1.6                  | 25.4                 | 1.8                         | 1.24 | 28.6                      | 2171                         |
| 25    | 7614-03C05000-W0BK8-00 | Black              | 3C          | 50                      | 19x1.78                   | 1.0                       | 1.0                         | 25.5                        | 1.6                  | 28.7                 | 1.9                         | 1.32 | 32.1                      | 2735                         |
| 26    | 7614-03C07000-W0BK8-00 | Black              | 3C          | 70                      | 19x2.14                   | 1.1                       | 1.2                         | 30.1                        | 2.0                  | 34.1                 | 2.0                         | 1.40 | 37.7                      | 3873                         |
| 27    | 7614-03C09500-W0BK8-00 | Black              | 3C          | 95                      | 19x2.52                   | 1.1                       | 1.2                         | 34.1                        | 2.0                  | 38.1                 | 2.2                         | 1.56 | 42.1                      | 4947                         |
| 28    | 7614-03C12000-W0BK8-00 | Black              | 3C          | 120                     | 37x2.03                   | 1.2                       | 1.2                         | 37.98                       | 2.0                  | 41.98                | 2.3                         | 1.64 | 46.0                      | 5960                         |
| 29    | 7614-03C15000-W0BK8-00 | Black              | 3C          | 150                     | 37x2.25                   | 1.4                       | 1.4                         | 42.48                       | 2.5                  | 47.48                | 2.5                         | 1.80 | 51.9                      | 7584                         |
| 30    | 7614-03C18500-W0BK8-00 | Black              | 3C          | 185                     | 37x2.52                   | 1.6                       | 1.4                         | 47.43                       | 2.5                  | 52.43                | 2.6                         | 1.88 | 57.0                      | 9149                         |
| 31    | 7614-03C24000-W0BK8-00 | Black              | 3C          | 240                     | 37x2.87                   | 1.7                       | 1.6                         | 53.86                       | 2.5                  | 58.86                | 2.8                         | 2.04 | 63.7                      | 11558                        |
| 32    | 7614-03C30000-W0BK8-00 | Black              | 3C          | 300                     | 61x2.50                   | 1.8                       | 1.6                         | 59.02                       | 2.5                  | 64.02                | 3.0                         | 2.20 | 69.2                      | 13712                        |
| 33    | 7614-04C00150-W0BK8-00 | Black              | 4C          | 1.5                     | 7x0.53                    | 0.7                       | 1.0                         | 9.4                         | 0.9                  | 11.2                 | 1.8                         | 1.24 | 14.4                      | 397                          |
| 34    | 7614-04C00250-W0BK8-00 | Black              | 4C          | 2.5                     | 7x0.67                    | 0.7                       | 1.0                         | 10.4                        | 0.9                  | 12.2                 | 1.8                         | 1.24 | 15.4                      | 475                          |
| 35    | 7614-04C00400-W0BK8-00 | Black              | 4C          | 4                       | 7x0.85                    | 0.7                       | 1.0                         | 11.7                        | 0.9                  | 13.5                 | 1.8                         | 1.24 | 16.7                      | 575                          |
| 36    | 7614-04C00600-W0BK8-00 | Black              | 4C          | 6                       | 7x1.04                    | 0.7                       | 1.0                         | 13.1                        | 1.25                 | 15.6                 | 1.8                         | 1.24 | 18.8                      | 799                          |
| 37    | 7614-04C01000-W0BK8-00 | Black              | 4C          | 10                      | 7x1.35                    | 0.7                       | 1.0                         | 15.3                        | 1.25                 | 17.8                 | 1.8                         | 1.24 | 21.0                      | 1053                         |

# Middle East Specialized Cables Co.

POWER CABLE

MULTI CORE, ARMORED FLAME RETARDANT

CU/XLPE/PVC/GSWA/PVC

SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

| SR NO | MESC CODE              | OUTER SHEATH COLOR | NO OF CORES | SIZE (mm <sup>2</sup> ) | STRAND x DIA.<br>(n x mm) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA.<br>(mm) | DIA. OVER ARMOR<br>(mm) | OUTER SHEATH THICKNESS (mm) |      | APPROX. OVERALL DIA. (mm) | APPROX. CABLE WEIGHT (kg/km) |
|-------|------------------------|--------------------|-------------|-------------------------|---------------------------|---------------------------|-----------------------------|-----------------------------|-------------------------|-------------------------|-----------------------------|------|---------------------------|------------------------------|
|       |                        |                    |             |                         |                           |                           |                             |                             |                         |                         | Nom.                        | Min. |                           |                              |
| 38    | 7614-04C01600-W0BK8-00 | Black              | 4C          | 16                      | 7x1.7                     | 0.7                       | 1.0                         | 17.7                        | 1.6                     | 20.9                    | 1.8                         | 1.24 | 24.1                      | 1508                         |
| 39    | 7614-04C02500-W0BK8-00 | Black              | 4C          | 25                      | 7x2.14                    | 0.9                       | 1.0                         | 21.7                        | 1.6                     | 24.9                    | 1.8                         | 1.24 | 28.1                      | 2084                         |
| 40    | 7614-04C03500-W0BK8-00 | Black              | 4C          | 35                      | 7x2.52                    | 0.9                       | 1.0                         | 24.5                        | 1.6                     | 27.7                    | 1.9                         | 1.32 | 31.1                      | 2634                         |
| 41    | 7614-04C05000-W0BK8-00 | Black              | 4C          | 50                      | 19x1.78                   | 1.0                       | 1.0                         | 28.2                        | 1.6                     | 31.4                    | 2.0                         | 1.40 | 35.0                      | 3344                         |
| 42    | 7614-04C07000-W0BK8-00 | Black              | 4C          | 70                      | 19x2.14                   | 1.1                       | 1.2                         | 33.3                        | 2.0                     | 37.3                    | 2.1                         | 1.48 | 41.1                      | 4747                         |
| 43    | 7614-04C09500-W0BK8-00 | Black              | 4C          | 95                      | 19x2.52                   | 1.1                       | 1.2                         | 37.8                        | 2.0                     | 41.8                    | 2.3                         | 1.64 | 45.8                      | 6063                         |
| 44    | 7614-04C12000-W0BK8-00 | Black              | 4C          | 120                     | 37x2.03                   | 1.2                       | 1.4                         | 32.86                       | 2.5                     | 37.86                   | 2.5                         | 1.80 | 42.3                      | 6920                         |
| 45    | 7614-04C15000-W0BK8-00 | Black              | 4C          | 150                     | 37x2.25                   | 1.4                       | 1.4                         | 36.4                        | 2.5                     | 41.4                    | 2.6                         | 1.88 | 46.0                      | 8251                         |
| 46    | 7614-04C18500-W0BK8-00 | Black              | 4C          | 185                     | 37x2.52                   | 1.6                       | 1.4                         | 40.62                       | 2.5                     | 45.62                   | 2.8                         | 2.04 | 50.4                      | 10075                        |
| 47    | 7614-04C24000-W0BK8-00 | Black              | 4C          | 240                     | 37x2.87                   | 1.7                       | 1.6                         | 45.96                       | 2.5                     | 50.96                   | 3.0                         | 2.20 | 56.2                      | 12822                        |
| 48    | 7614-04C30000-W0BK8-00 | Black              | 4C          | 300                     | 61x2.50                   | 1.8                       | 1.6                         | 41.74                       | 2.5                     | 46.74                   | 3.2                         | 2.36 | 52.3                      | 14365                        |

## Note:

The tolerance on the cable overall diameter shall be +/- 2.5mm up to 30mm & +/- 3.0mm above 30mm.

## Middle East Specialized Cables Co.

POWER CABLE  
MULTI CORE, ARMORED FLAME RETARDANT  
CU/XLPE/PVC/GSWA/PVC  
SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

### CONSTRUCTION

|                                |                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>               | Compact circular stranded annealed plain Copper Class 2 to IEC 60228.                                                                         |
| <b>Insulation</b>              | Cross linked polyethylene (XLPE) to IEC 60502-1.                                                                                              |
| <b>Color Code</b>              | 2C: Red & Black<br>3C: Red, Yellow & Blue<br>4C: Red, Yellow, Blue & Black                                                                    |
| <b>Cabling</b>                 | Cores are assembled in a concentric layer and laid up with non-hygroscopic Centre PP filler & assembly is wrapped with polyester binder tape. |
| <b>Inner Sheath</b>            | Extruded, Flame retardant PVC Type ST-2 to IEC 60502-1 in Black Color.                                                                        |
| <b>Armor</b>                   | A single layer of galvanized steel wire armor to EN 10257-1 is applied over the inner sheath.                                                 |
| <b>Outer Sheath</b>            | Flame retardant PVC Type ST-2 to IEC 60502-1. The color of the sheath shall be as per dimension sheet.                                        |
| <b>Embossing on the sheath</b> | CU/XLPE/PVC/GSWA/PVC NO OF CORES C X....MM2 600/1000V MESC YEAR IEC 60502-1 IEC 60332-3 CAT C ZERO PROGRESSIVE LENGTH METER MARKING           |

### Technical Data:

|                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature</b>                    | -15°C to +90°C                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>Voltage Rating</b>                           | 600/1000 Volts                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>DC Cond. Res. at 20 Deg. C Max. (Ohm/Km)</b> | 12.1(1.5mm <sup>2</sup> ), 7.41 (2.5mm <sup>2</sup> ), 4.61 (4mm <sup>2</sup> ), 3.08 (6mm <sup>2</sup> ), 1.83 (10mm <sup>2</sup> ), 1.15 (16mm <sup>2</sup> ), 0.727 (25mm <sup>2</sup> ), 0.524 (35mm <sup>2</sup> ), 0.387 (50mm <sup>2</sup> ), 0.268 (70mm <sup>2</sup> ), 0.193 (95mm <sup>2</sup> ), 0.153 (120mm <sup>2</sup> ), 0.124 (150mm <sup>2</sup> ), 0.0991 (185mm <sup>2</sup> ), 0.0754 (240mm <sup>2</sup> ), 0.0601 (300mm <sup>2</sup> ) |
| <b>Voltage Withstand (V/Minute)</b>             | 3500 V <sub>RMS</sub> / 5 or 8400 V <sub>DC</sub> / 5                                                                                                                                                                                                                                                                                                                                                                                                           |

### Flame Behavior Characteristics:

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| <b>Flame retardant</b>                      | IEC 60332-1 & IEC 60332-3 CAT C |
| <b>Halogen acid gas (outer sheath)</b>      | MAX. 17% ( IEC 60754-1)         |
| <b>Limiting Oxygen index (outer sheath)</b> | ≥ 30% (ASTM D2863)              |
| <b>Temperature Index</b>                    | ≥ 250°C (ASTM D2863)            |
| <b>UV Resistance (Outer Sheath)</b>         | ISO 4892 (500hrs.)              |
| <b>Oil Resistance (Outer Sheath)</b>        | IEC 60811-404                   |
| <b>Min. Bending Radius</b>                  | 12 X Cable Overall Diameter     |

# Middle East Specialized Cables Co.

POWER CABLE

MULTI CORE, ARMORED FLAME RETARDANT

CU/XLPE/PVC/GSWA/PVC

SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

## DIMENSIONAL DATA

| SR NO | MESC CODE              | OUTER SHEATH COLOR | NO OF CORES | SIZE (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA. (mm) | DIA. OVER ARMOR (mm) | OUTER SHEATH THICKNESS (mm) |      | APPROX. OVERALL DIA. (mm) | APPROX. CABLE WEIGHT (kg/km) |
|-------|------------------------|--------------------|-------------|-------------------------|---------------------------|-----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|------|---------------------------|------------------------------|
|       |                        |                    |             |                         |                           |                             |                             |                      |                      | Nom.                        | Min. |                           |                              |
| 1     | 76D4-02C01000-W0BK8-00 | Black              | 2C          | 10                      | 0.7                       | 1.0                         | 12.2                        | 1.25                 | 14.7                 | 1.8                         | 1.24 | 17.9                      | 729                          |
| 2     | 76D4-02C01600-W0BK8-00 | Black              | 2C          | 16                      | 0.7                       | 1.0                         | 14.1                        | 1.25                 | 16.6                 | 1.8                         | 1.24 | 19.8                      | 925                          |
| 3     | 76D4-02C02500-W0BK8-00 | Black              | 2C          | 25                      | 0.9                       | 1.0                         | 17.4                        | 1.6                  | 20.6                 | 1.8                         | 1.24 | 23.8                      | 1402                         |
| 4     | 76D4-02C03500-W0BK8-00 | Black              | 2C          | 35                      | 0.9                       | 1.0                         | 19.6                        | 1.6                  | 22.8                 | 1.8                         | 1.24 | 26.0                      | 1701                         |
| 5     | 76D4-02C05000-W0BK8-00 | Black              | 2C          | 50                      | 1.0                       | 1.0                         | 22.6                        | 1.6                  | 25.8                 | 1.8                         | 1.24 | 29.0                      | 2144                         |
| 6     | 76D4-02C07000-W0BK8-00 | Black              | 2C          | 70                      | 1.1                       | 1.0                         | 26.2                        | 1.6                  | 29.4                 | 2.0                         | 1.40 | 33.0                      | 2916                         |
| 7     | 76D4-02C09500-W0BK8-00 | Black              | 2C          | 95                      | 1.1                       | 1.2                         | 30.1                        | 2.0                  | 34.1                 | 2.1                         | 1.48 | 37.9                      | 3825                         |
| 8     | 76D4-02C12000-W0BK8-00 | Black              | 2C          | 120                     | 1.2                       | 1.2                         | 33.3                        | 2.0                  | 37.3                 | 2.2                         | 1.56 | 41.3                      | 4623                         |
| 9     | 76D4-02C15000-W0BK8-00 | Black              | 2C          | 150                     | 1.4                       | 1.2                         | 37.1                        | 2.0                  | 41.1                 | 2.3                         | 1.64 | 45.1                      | 5449                         |
| 10    | 76D4-02C18500-W0BK8-00 | Black              | 2C          | 185                     | 1.6                       | 1.4                         | 41.5                        | 2.5                  | 46.5                 | 2.5                         | 1.80 | 50.9                      | 7036                         |
| 11    | 76D4-02C24000-W0BK8-00 | Black              | 2C          | 240                     | 1.7                       | 1.4                         | 46.4                        | 2.5                  | 51.4                 | 2.7                         | 1.96 | 56.2                      | 8650                         |
| 12    | 76D4-02C30000-W0BK8-00 | Black              | 2C          | 300                     | 1.8                       | 1.6                         | 51.5                        | 2.5                  | 56.5                 | 2.8                         | 2.04 | 61.3                      | 10393                        |
| 13    | 76D4-03C01000-W0BK8-00 | Black              | 3C          | 10                      | 0.7                       | 1.0                         | 13.0                        | 1.25                 | 15.5                 | 1.8                         | 1.24 | 18.7                      | 834                          |
| 14    | 76D4-03C01600-W0BK8-00 | Black              | 3C          | 16                      | 0.7                       | 1.0                         | 15.0                        | 1.25                 | 17.5                 | 1.8                         | 1.24 | 20.7                      | 1088                         |
| 15    | 76D4-03C02500-W0BK8-00 | Black              | 3C          | 25                      | 0.9                       | 1.0                         | 18.6                        | 1.6                  | 21.8                 | 1.8                         | 1.24 | 25.0                      | 1663                         |
| 16    | 76D4-03C03500-W0BK8-00 | Black              | 3C          | 35                      | 0.9                       | 1.0                         | 21.0                        | 1.6                  | 24.2                 | 1.8                         | 1.24 | 27.4                      | 2065                         |
| 17    | 76D4-03C05000-W0BK8-00 | Black              | 3C          | 50                      | 1.0                       | 1.0                         | 24.2                        | 1.6                  | 27.4                 | 1.9                         | 1.32 | 30.8                      | 2629                         |
| 18    | 76D4-03C07000-W0BK8-00 | Black              | 3C          | 70                      | 1.1                       | 1.2                         | 28.5                        | 2.0                  | 32.5                 | 2.0                         | 1.40 | 36.1                      | 3893                         |
| 19    | 76D4-03C09500-W0BK8-00 | Black              | 3C          | 95                      | 1.1                       | 1.2                         | 32.3                        | 2.0                  | 36.3                 | 2.2                         | 1.56 | 40.3                      | 4751                         |
| 20    | 76D4-03C12000-W0BK8-00 | Black              | 3C          | 120                     | 1.2                       | 1.2                         | 35.7                        | 2.0                  | 39.7                 | 2.3                         | 1.64 | 43.7                      | 5725                         |
| 21    | 76D4-03C15000-W0BK8-00 | Black              | 3C          | 150                     | 1.4                       | 1.4                         | 40.3                        | 2.5                  | 45.3                 | 2.5                         | 1.80 | 49.7                      | 7320                         |
| 22    | 76D4-03C18500-W0BK8-00 | Black              | 3C          | 185                     | 1.6                       | 1.4                         | 44.6                        | 2.5                  | 49.6                 | 2.6                         | 1.88 | 54.2                      | 8786                         |
| 23    | 76D4-03C24000-W0BK8-00 | Black              | 3C          | 240                     | 1.7                       | 1.6                         | 50.2                        | 2.5                  | 55.2                 | 2.8                         | 2.04 | 60.0                      | 10976                        |
| 24    | 76D4-03C30000-W0BK8-00 | Black              | 3C          | 300                     | 1.8                       | 1.6                         | 55.3                        | 2.5                  | 60.3                 | 3.0                         | 2.20 | 65.5                      | 13207                        |
| 25    | 76D4-04C01000-W0BK8-00 | Black              | 4C          | 10                      | 0.7                       | 1.0                         | 14.3                        | 1.25                 | 16.8                 | 1.8                         | 1.24 | 20.0                      | 983                          |
| 26    | 76D4-04C01600-W0BK8-00 | Black              | 4C          | 16                      | 0.7                       | 1.0                         | 16.5                        | 1.6                  | 19.7                 | 1.8                         | 1.24 | 22.9                      | 1409                         |
| 27    | 76D4-04C02500-W0BK8-00 | Black              | 4C          | 25                      | 0.9                       | 1.0                         | 20.5                        | 1.6                  | 23.7                 | 1.8                         | 1.24 | 26.9                      | 1984                         |
| 28    | 76D4-04C03500-W0BK8-00 | Black              | 4C          | 35                      | 0.9                       | 1.0                         | 23.2                        | 1.6                  | 26.4                 | 1.9                         | 1.32 | 29.8                      | 2514                         |
| 29    | 76D4-04C05000-W0BK8-00 | Black              | 4C          | 50                      | 1.0                       | 1.0                         | 26.8                        | 1.6                  | 30.0                 | 2.0                         | 1.40 | 33.6                      | 3212                         |
| 30    | 76D4-04C07000-W0BK8-00 | Black              | 4C          | 70                      | 1.1                       | 1.2                         | 31.5                        | 2.0                  | 35.5                 | 2.1                         | 1.48 | 39.3                      | 4777                         |
| 31    | 76D4-04C09500-W0BK8-00 | Black              | 4C          | 95                      | 1.1                       | 1.2                         | 35.7                        | 2.0                  | 39.7                 | 2.3                         | 1.64 | 43.7                      | 5835                         |
| 32    | 76D4-04C12000-W0BK8-00 | Black              | 4C          | 120                     | 1.2                       | 1.4                         | 40.0                        | 2.5                  | 45.0                 | 2.5                         | 1.80 | 49.4                      | 7575                         |
| 33    | 76D4-04C15000-W0BK8-00 | Black              | 4C          | 150                     | 1.4                       | 1.4                         | 44.6                        | 2.5                  | 49.6                 | 2.6                         | 1.88 | 54.2                      | 9033                         |
| 34    | 76D4-04C18500-W0BK8-00 | Black              | 4C          | 185                     | 1.6                       | 1.4                         | 49.4                        | 2.5                  | 54.4                 | 2.8                         | 2.04 | 59.2                      | 10903                        |
| 35    | 76D4-04C24000-W0BK8-00 | Black              | 4C          | 240                     | 1.7                       | 1.6                         | 55.7                        | 2.5                  | 60.7                 | 3.0                         | 2.20 | 65.9                      | 13691                        |
| 36    | 76D4-04C30000-W0BK8-00 | Black              | 4C          | 300                     | 1.8                       | 1.6                         | 61.3                        | 2.5                  | 66.3                 | 3.2                         | 2.36 | 71.9                      | 16538                        |

### Note:

The tolerance on the cable overall diameter shall be +/- 2.5mm up to 30mm & +/- 3.0mm above 30mm.

## Middle East Specialized Cables Co.

POWER CABLE

MULTI CORE, ARMORED FLAME RETARDANT

CU/XLPE/PVC/GSWA/PVC

SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

### CONSTRUCTION

|                                |                                                                                                                                               |
|--------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Conductor</b>               | Shaped stranded annealed plain Copper Class 2 to IEC 60228.                                                                                   |
| <b>Insulation</b>              | Cross linked polyethylene (XLPE) to IEC 60502-1.                                                                                              |
| <b>Color Code</b>              | 3C: Red, Yellow & Blue<br>4C: Red, Yellow, Blue & Black                                                                                       |
| <b>Cabling</b>                 | Cores are assembled in a concentric layer and laid up with non-hygroscopic Centre PP filler & assembly is wrapped with polyester binder tape. |
| <b>Inner Sheath</b>            | Extruded, Flame retardant PVC Type ST-2 to IEC 60502-1 in Black Color.                                                                        |
| <b>Aarmor</b>                  | A single layer of galvanized steel wire armor to EN 10257-1 is applied over the inner sheath.                                                 |
| <b>Outer Sheath</b>            | Flame retardant PVC Type ST-2 to IEC 60502-1. The color of the sheath shall be as per dimension sheet.                                        |
| <b>Embossing on the sheath</b> | CU/XLPE/PVC/GSWA/PVC NO OF CORES C X...MM2 600/1000V MESC YEAR IEC 60502-1 IEC 60332-3 CAT C ZERO PROGRESSIVE LENGTH METER MARKING            |

### Technical Data:

|                                                 |                                                                                                                                                                                                                                                                                                |
|-------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Operating Temperature</b>                    | -15°C to +90°C                                                                                                                                                                                                                                                                                 |
| <b>Voltage Rating</b>                           | 600/1000 Volts                                                                                                                                                                                                                                                                                 |
| <b>DC Cond. Res. at 20 Deg. C Max. (Ohm/Km)</b> | 0.727 (25mm <sup>2</sup> ), 0.524 (35mm <sup>2</sup> ), 0.387 (50mm <sup>2</sup> ), 0.268 (70mm <sup>2</sup> ), 0.193 (95mm <sup>2</sup> ), 0.153 (120mm <sup>2</sup> ), 0.124 (150mm <sup>2</sup> ), 0.0991 (185mm <sup>2</sup> ), 0.0754 (240mm <sup>2</sup> ), 0.0601 (300mm <sup>2</sup> ) |
| <b>Voltage Withstand (V/Minute)</b>             | 3500 V <sub>RMS</sub> / 5 or 8400 V <sub>DC</sub> / 5                                                                                                                                                                                                                                          |

### Flame Behavior Characteristics:

|                                             |                                 |
|---------------------------------------------|---------------------------------|
| <b>Flame retardant</b>                      | IEC 60332-1 & IEC 60332-3 CAT C |
| <b>Halogen acid gas (outer sheath)</b>      | MAX. 17% ( IEC 60754-1)         |
| <b>Limiting Oxygen index (outer sheath)</b> | ≥ 30% (ASTM D2863)              |
| <b>Temperature Index</b>                    | ≥ 250°C (ASTM D2863)            |
| <b>UV Resistance (Outer Sheath)</b>         | ISO 4892 (500hrs.)              |
| <b>Oil Resistance (Outer Sheath)</b>        | IEC 60811-404                   |
| <b>Min. Bending Radius</b>                  | 12 X Cable Overall Diameter     |

# Middle East Specialized Cables Co.

POWER CABLE

MULTI CORE, ARMORED FLAME RETARDANT

CU/XLPE/PVC/GSWA/PVC

SPECIFICATION: IEC 60502-1 & IEC 60332-3 CAT C

## DIMENSIONAL DATA

### SECTOR SHAPE:

| SR NO | MESC CODE              | OUTER SHEATH COLOR | NO OF CORES | SIZE (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA. (mm) | DIA. OVER ARMOR (mm) | OUTER SHEATH THICKNESS (mm) |      | APPROX. OVERALL DIA. (mm) | APPROX. CABLE WEIGHT (kg/km) |
|-------|------------------------|--------------------|-------------|-------------------------|---------------------------|-----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|------|---------------------------|------------------------------|
|       |                        |                    |             |                         |                           |                             |                             |                      |                      | Nom.                        | Min. |                           |                              |
| 1     | 76F4-03C02500-W0BK8-00 | Black              | 3C          | 25                      | 0.9                       | 1.0                         | 16.5                        | 1.6                  | 19.7                 | 1.8                         | 1.24 | 22.9                      | 1454                         |
| 2     | 76F4-03C03500-W0BK8-00 | Black              | 3C          | 35                      | 0.9                       | 1.0                         | 18.3                        | 1.6                  | 21.5                 | 1.8                         | 1.24 | 24.7                      | 1789                         |
| 3     | 76F4-03C05000-W0BK8-00 | Black              | 3C          | 50                      | 1.0                       | 1.0                         | 21.1                        | 1.6                  | 24.3                 | 1.9                         | 1.32 | 27.7                      | 2274                         |
| 4     | 76F4-03C07000-W0BK8-00 | Black              | 3C          | 70                      | 1.1                       | 1.2                         | 24.6                        | 2.0                  | 28.6                 | 2.0                         | 1.40 | 32.2                      | 3233                         |
| 5     | 76F4-03C09500-W0BK8-00 | Black              | 3C          | 95                      | 1.1                       | 1.2                         | 27.5                        | 2.0                  | 31.5                 | 2.2                         | 1.56 | 35.5                      | 4113                         |
| 6     | 76F4-03C12000-W0BK8-00 | Black              | 3C          | 120                     | 1.2                       | 1.2                         | 30.4                        | 2.0                  | 34.4                 | 2.3                         | 1.64 | 38.4                      | 5000                         |
| 7     | 76F4-03C15000-W0BK8-00 | Black              | 3C          | 150                     | 1.4                       | 1.4                         | 34.3                        | 2.5                  | 39.3                 | 2.5                         | 1.80 | 43.7                      | 6300                         |
| 8     | 76F4-03C18500-W0BK8-00 | Black              | 3C          | 185                     | 1.6                       | 1.4                         | 37.9                        | 2.5                  | 42.9                 | 2.6                         | 1.88 | 47.5                      | 7550                         |
| 9     | 76F4-03C24000-W0BK8-00 | Black              | 3C          | 240                     | 1.7                       | 1.6                         | 42.7                        | 2.5                  | 47.7                 | 2.8                         | 2.04 | 52.5                      | 9425                         |
| 10    | 76F4-03C30000-W0BK8-00 | Black              | 3C          | 300                     | 1.8                       | 1.6                         | 46.9                        | 2.5                  | 51.6                 | 3.0                         | 2.20 | 57.1                      | 11390                        |
| 11    | 76F4-04C02500-W0BK8-00 | Black              | 4C          | 25                      | 0.9                       | 1.0                         | 19.4                        | 1.6                  | 22.6                 | 1.8                         | 1.24 | 25.8                      | 1809                         |
| 12    | 76F4-04C03500-W0BK8-00 | Black              | 4C          | 35                      | 0.9                       | 1.0                         | 21.8                        | 1.6                  | 25.0                 | 1.9                         | 1.32 | 28.4                      | 2275                         |
| 13    | 76F4-04C05000-W0BK8-00 | Black              | 4C          | 50                      | 1.0                       | 1.0                         | 25.2                        | 1.6                  | 28.4                 | 2.0                         | 1.40 | 32.0                      | 2905                         |
| 14    | 76F4-04C07000-W0BK8-00 | Black              | 4C          | 70                      | 1.1                       | 1.2                         | 29.4                        | 2.0                  | 33.4                 | 2.1                         | 1.48 | 37.2                      | 4112                         |
| 15    | 76F4-04C09500-W0BK8-00 | Black              | 4C          | 95                      | 1.1                       | 1.2                         | 33.0                        | 2.0                  | 37.0                 | 2.3                         | 1.64 | 41.0                      | 5247                         |
| 16    | 76F4-04C12000-W0BK8-00 | Black              | 4C          | 120                     | 1.2                       | 1.4                         | 37.0                        | 2.5                  | 42.0                 | 2.5                         | 1.80 | 46.4                      | 6750                         |
| 17    | 76F4-04C15000-W0BK8-00 | Black              | 4C          | 150                     | 1.4                       | 1.4                         | 41.2                        | 2.5                  | 46.2                 | 2.6                         | 1.88 | 50.8                      | 8000                         |
| 18    | 76F4-04C18500-W0BK8-00 | Black              | 4C          | 185                     | 1.6                       | 1.4                         | 45.6                        | 2.5                  | 50.6                 | 2.8                         | 2.04 | 55.4                      | 9710                         |
| 19    | 76F4-04C24000-W0BK8-00 | Black              | 4C          | 240                     | 1.7                       | 1.6                         | 51.4                        | 2.5                  | 56.4                 | 3.0                         | 2.20 | 61.6                      | 12230                        |
| 20    | 76F4-04C30000-W0BK8-00 | Black              | 4C          | 300                     | 1.8                       | 1.6                         | 56.8                        | 2.5                  | 61.8                 | 3.2                         | 2.36 | 67.2                      | 14810                        |

### **Note:**

The tolerance on the cable overall diameter shall be +/- 2.5mm up to 30mm & +/- 3.0mm above 30mm.

## POWER, MULTI CORE, ARMORED CABLE

### CU/ XLPE/PVC/SWA/PVC SPECIFICATION: BS 5467



#### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground location under mechanical stresses in the power and switching station, local distribution system, industrial plant and commercial building.

#### CONSTRUCTION

|                                          |                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor                                | Circular Stranded Compact Annealed Plain Copper to Class 2 of IEC 60228.                                                                                           |
| Insulation                               | Cross linked Polyethylene (XLPE) Type GP8 as per BS 7655 1.2                                                                                                       |
| Color Code #                             | Two Core - Brown, blue<br>Three Core - Brown, black, grey<br>Four Core - Blue, brown, black, grey                                                                  |
| Cabling / Laying up                      | Cores are assembled in a concentric layer.                                                                                                                         |
| Inner Sheath / Bedding                   | Flame Retardant PVC in Black Color compatible to operating temperature of conductor.                                                                               |
| Wire Armour                              | A single layer of galvanized steel wire armor applied over the inner sheath.                                                                                       |
| Over sheath                              | Flame Retardant PVC Type 9 to BS 7655 4.2 and confirming to IEC60332-1. The color of the sheath shall be Black. Other sheath colors are also available on request. |
| Embossing on outer Sheath (refer note 1) | ELECTRIC CABLE 600/1000V BS 5467 NO. OF CORES X SIZE MESC YEAR LENGTH METER MARKING                                                                                |

#### TECHNICAL DATA

|                              |                            |
|------------------------------|----------------------------|
| Temperature Range            | - 5°C to 90°C              |
| Voltage Rating               | 600/1000 V                 |
| Voltage Withstand (V/Minute) | 3500 RMS / 5               |
| Min. Bending Radius (mm)     | 8 X Cable Overall Diameter |
| Max Short Circuit Temp (°C)  | 250 (for 5 Second Maximum) |

#### TABLE

| NO OF CORE (Nos.) | CONDUCTOR CROSS SECTIONAL AREA (mm <sup>2</sup> ) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA. (mm) | DIA. OVER ARMOR (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT OF CABLE (kg/km) | DC Cond. Res. at 20 Deg. C Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C Max. (Ohm/Km) | Inductance at 50 60Hz (miliH/Km) | Inductive Reactance at 50 - 60Hz (Ohm/Km) | Impedance at 50 - 60Hz & at 90 Deg. C (Ohm/Km) | Cond. Short Circuit current Rating (Kamp/Sec) | *CURRENT CARRING CAPACITY AT 20 °C IN GROUND Amp. | *CURRENT CARRING CAPACITY AT 30 °C IN AIR Amp. |
|-------------------|---------------------------------------------------|---------------------------|-----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|--------------------------|---------------------------------|------------------------------------------|------------------------------------------|----------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------|---------------------------------------------------|------------------------------------------------|
| 2                 | 16                                                | 0.7                       | 0.8                         | 14.3                        | 1.25                 | 16.8                 | 1.5                         | 19.8                     | 940                             | 1.15                                     | 1.47                                     | 0.255                            | 0.080                                     | 1.469                                          | 2.26                                          | 131                                               | 107                                            |
| 2                 | 25                                                | 0.9                       | 0.8                         | 17.3                        | 1.25                 | 19.8                 | 1.6                         | 23.0                     | 1286                            | 0.727                                    | 0.927                                    | 0.255                            | 0.080                                     | 0.930                                          | 3.53                                          | 168                                               | 145                                            |
| 2                 | 35                                                | 0.9                       | 1.0                         | 19.8                        | 1.6                  | 23.0                 | 1.7                         | 26.4                     | 1770                            | 0.524                                    | 0.668                                    | 0.248                            | 0.078                                     | 0.673                                          | 4.95                                          | 199                                               | 177                                            |
| 3                 | 16                                                | 0.7                       | 0.8                         | 15.3                        | 1.25                 | 17.8                 | 1.6                         | 21.0                     | 1115                            | 1.15                                     | 1.47                                     | 0.255                            | 0.080                                     | 1.469                                          | 2.26                                          | 111                                               | 96                                             |
| 4                 | 16                                                | 0.7                       | 0.8                         | 16.8                        | 1.25                 | 19.3                 | 1.6                         | 22.6                     | 1336                            | 1.15                                     | 1.47                                     | 0.255                            | 0.080                                     | 1.469                                          | 2.26                                          | 111                                               | 96                                             |

#Other Insulation colour is available on request.

\*Detail Please Refer the Technical Information Section.

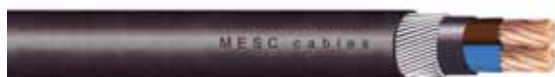
Note:

- The Marking on outer sheath shall be embossed and the text shall appear on two lines for above 15mm cable diameter and one line for 15mm & below cable diameter along the cable axis approximately equally spaced around the circumference. The letters & figures shall be upright block characters with a minimum height of 3 mm.
- Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

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## POWER, MULTI CORE, ARMORED CABLE

CU/ XLPE/PVC SWA/PVC SPECIFICATION: BS 5467



### Application

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground location under mechanical stresses in the power and switching station, local distribution system, industrial plant and commercial building.

### CONSTRUCTION

|                                          |                                                                                                                                                                                    |
|------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor                                | Stranded annealed plain circular copper to Class 2 of IEC 60228.                                                                                                                   |
| Insulation                               | Cross linked Polyethylene (XLPE) Type GP8 as per BS 7655 1.2                                                                                                                       |
| Color Code                               | Two Core - Brown, blue<br>Three Core - Brown, black, grey<br>Four Core - Blue, brown, black, grey<br>Five Core - Green-and-yellow, blue, brown, black, grey                        |
| Cabling / Laying up                      | Cores are assembled in a concentric layer with filler (if necessary) for up to 4 Cores. Assembly with 5 cores or more is wrapped with a polyester tape with filler (if necessary). |
| Inner Sheath / Bedding                   | Flame Retardant PVC in Black Color compatible to operating temperature of conductor.                                                                                               |
| Wire Armour                              | A single layer of galvanized steel wire armor applied over the inner sheath.                                                                                                       |
| Over sheath                              | Flame Retardant PVC Type 9 to BS 7655 4.2 and confirming to IEC60332-1. The color of the sheath shall be Black. Other sheath colors are also available on request.                 |
| Embossing on outer Sheath (refer note 1) | ELECTRIC CABLE 600/1000V BS 5467 NO. OF CORES X SIZE MESC YEAR LENGTH METER MARKING                                                                                                |

### TECHNICAL DATA

|                              |                            |
|------------------------------|----------------------------|
| Temperature Range            | - 5°C to 90°C              |
| Voltage Rating               | 600/1000 V                 |
| Voltage Withstand (V/Minute) | 3500 RMS / 5               |
| Min. Bending Radius (mm)     | 8 X Cable Overall Diameter |
| Max Short Circuit Temp (°C)  | 250 (for 5 Second Maximum) |

**TABLE**

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS SECTIONAL<br>AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | ARMOR WIRE DIA.<br>(mm) | DIA. OVER ARMOR<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE (kg/<br>km) | DC Cond. Res. at 20 Deg. C Max.<br>(Ohm/Km) | AC Cond. Res. at 90 Deg. C Max.<br>(Ohm/Km) | Inductance at 50<br>60Hz (miliH/Km) | Inductive Reactance at 50 - 60Hz<br>(Ohm/Km) | Impedance at 50 - 60Hz & at 90<br>Deg. C (Ohm/Km) | Cond. Short Circuit current Rating<br>(kAmp/Sec) | *CURRENT CARRING CAPACITY AT 20<br>°C IN GROUND Amp. | *CURRENT CARRING CAPACITY AT 30<br>°C IN<br>AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|-----------------------------|--------------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------|-------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|------------------------------------------------------|------------------------------------------------------|
| 2                    | 1.5                                                  | 0.6                          | 0.8                         | 7.6                            | 0.9                     | 9.4                     | 1.3                            | 12.4                        | 291                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 37                                                   | 26                                                   |
| 2                    | 2.5                                                  | 0.7                          | 0.8                         | 8.9                            | 0.9                     | 10.7                    | 1.4                            | 13.8                        | 363                                 | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 49                                                   | 35                                                   |
| 2                    | 4                                                    | 0.7                          | 0.8                         | 9.9                            | 0.9                     | 11.7                    | 1.4                            | 14.8                        | 428                                 | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 67                                                   | 46                                                   |
| 2                    | 6                                                    | 0.7                          | 0.8                         | 11.1                           | 0.9                     | 12.9                    | 1.4                            | 16.0                        | 517                                 | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 78                                                   | 59                                                   |
| 2                    | 10                                                   | 0.7                          | 0.8                         | 13.2                           | 0.9                     | 15.0                    | 1.5                            | 18.3                        | 692                                 | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 103                                                  | 80                                                   |
| 3                    | 1.5                                                  | 0.6                          | 0.8                         | 8.1                            | 0.9                     | 9.9                     | 1.3                            | 12.8                        | 321                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                   | 24                                                   |
| 3                    | 2.5                                                  | 0.7                          | 0.8                         | 9.3                            | 0.9                     | 11.1                    | 1.4                            | 14.0                        | 392                                 | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                   | 32                                                   |
| 3                    | 4                                                    | 0.7                          | 0.8                         | 10.6                           | 0.9                     | 12.4                    | 1.4                            | 15.6                        | 471                                 | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                   | 42                                                   |
| 3                    | 6                                                    | 0.7                          | 0.8                         | 11.8                           | 0.9                     | 13.6                    | 1.4                            | 16.8                        | 569                                 | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                   | 53                                                   |
| 3                    | 10                                                   | 0.7                          | 0.8                         | 13.8                           | 1.25                    | 16.3                    | 1.5                            | 19.7                        | 855                                 | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                   | 73                                                   |
| 4                    | 1.5                                                  | 0.6                          | 0.8                         | 8.7                            | 0.9                     | 10.5                    | 1.3                            | 13.1                        | 357                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 30                                                   | 24                                                   |
| 4                    | 2.5                                                  | 0.7                          | 0.8                         | 10.2                           | 0.9                     | 12.0                    | 1.4                            | 14.8                        | 453                                 | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 40                                                   | 32                                                   |
| 4                    | 4                                                    | 0.7                          | 0.8                         | 11.4                           | 0.9                     | 13.2                    | 1.4                            | 16.1                        | 557                                 | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 52                                                   | 42                                                   |
| 4                    | 6                                                    | 0.7                          | 0.8                         | 12.9                           | 1.25                    | 15.4                    | 1.5                            | 18.4                        | 787                                 | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 64                                                   | 53                                                   |
| 4                    | 10                                                   | 0.7                          | 0.8                         | 15.0                           | 1.25                    | 17.5                    | 1.5                            | 20.6                        | 1039                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 86                                                   | 73                                                   |
| 5                    | 1.5                                                  | 0.6                          | 0.8                         | 9.2                            | 0.9                     | 11.1                    | 1.4                            | 13.5                        | 363                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 21                                                   | 18                                                   |
| 5                    | 2.5                                                  | 0.7                          | 0.8                         | 10.9                           | 0.9                     | 12.7                    | 1.4                            | 15.2                        | 448                                 | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 28                                                   | 24                                                   |
| 5                    | 4                                                    | 0.7                          | 0.8                         | 12.3                           | 0.9                     | 14.1                    | 1.5                            | 16.8                        | 568                                 | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 36                                                   | 31                                                   |
| 5                    | 6                                                    | 0.7                          | 0.8                         | 13.9                           | 1.25                    | 16.4                    | 1.5                            | 19.1                        | 799                                 | 3.08                                        | 3.93                                        | 0.281                               | 0.088                                        | 3.928                                             | 0.85                                             | 44                                                   | 39                                                   |
| 5                    | 10                                                   | 0.7                          | 0.8                         | 16.4                           | 1.25                    | 18.9                    | 1.6                            | 21.7                        | 1082                                | 1.83                                        | 2.33                                        | 0.266                               | 0.084                                        | 2.335                                             | 1.41                                             | 60                                                   | 54                                                   |
| 5                    | 16                                                   | 0.7                          | 1.0                         | 19.5                           | 1.6                     | 22.7                    | 1.7                            | 25.5                        | 1596                                | 1.15                                        | 1.47                                        | 0.255                               | 0.080                                        | 1.469                                             | 2.26                                             | 77                                                   | 72                                                   |
| 5                    | 25                                                   | 0.9                          | 1.0                         | 23.9                           | 1.6                     | 27.1                    | 1.8                            | 30.2                        | 2230                                | 0.727                                       | 0.927                                       | 0.255                               | 0.080                                        | 0.930                                             | 3.53                                             | 100                                                  | 97                                                   |
| 5                    | 35                                                   | 0.9                          | 1.0                         | 27.1                           | 1.6                     | 30.2                    | 1.9                            | 33.5                        | 2835                                | 0.524                                       | 0.668                                       | 0.248                               | 0.078                                        | 0.673                                             | 4.95                                             | 121                                                  | 120                                                  |
| 5                    | 50                                                   | 1.0                          | 1.2                         | 31.6                           | 2.0                     | 35.6                    | 2.0                            | 39.0                        | 3877                                | 0.387                                       | 0.493                                       | 0.245                               | 0.077                                        | 0.499                                             | 7.07                                             | 143                                                  | 146                                                  |

\*Detail Please Refer the Technical Information Section.

Note:

1. The Marking on outer sheath shall be embossed and the text shall appear on two lines for above 15mm cable diameter and one line for 15mm & below cable diameter along the cable axis approximately equally spaced around the circumference. The letters & figures shall be upright block characters with a minimum height of 3 mm.
2. Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

at the heart of every project

## CONTROL, MULTI CORE, ARMORED CABLE

CU/ XLPE/PVC/SWA/PVC SPECIFICATION: BS 5467



### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground location under mechanical stresses in the power and switching station, local distribution system, industrial plant and commercial building.

### CONSTRUCTION

|                                          |                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor                                | Stranded Annealed Plain Copper to Class 2 of IEC 60228.                                                                                                            |
| Insulation                               | Cross linked Polyethylene (XLPE) Type GP8 as per BS 7655 1.2                                                                                                       |
| Color Code                               | Black cores with number printing on each core                                                                                                                      |
| Cabling / Laying up                      | Cores are assembled in a concentric layer with suitable filler & wrapped with a polyester tape.                                                                    |
| Inner Sheath / Bedding                   | Flame Retardant PVC in Black Color compatible to operating temperature of conductor.                                                                               |
| Wire Armour                              | A single layer of galvanized steel wire armor applied over the inner sheath.                                                                                       |
| Over sheath                              | Flame Retardant PVC Type 9 to BS 7655 4.2 and confirming to IEC60332-1. The color of the sheath shall be Black. Other sheath colors are also available on request. |
| Embossing on outer Sheath (refer note 1) | ELECTRIC CABLE 600/1000V AUX BS 5467 NO. OF CORES X SIZE MESC YEAR LENGTH METER MARKING                                                                            |

### TECHNICAL DATA

|                              |                            |
|------------------------------|----------------------------|
| Temperature Range            | - 5°C to 90°C              |
| Voltage Rating               | 600/1000 V                 |
| Voltage Withstand (V/Minute) | 3500 RMS / 5               |
| Min. Bending Radius (mm)     | 6 X Cable Overall Diameter |
| Max Short Circuit Temp (°C)  | 250 (for 5 Second Maximum) |

**TABLE**

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS SECTIONAL<br>AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER<br>SHEATH (mm) | ARMOR WIRE DIA.<br>(mm) | DIA. OVER ARMOR<br>(mm) | OUTER SHEATH<br>THICKNESS (mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT OF CABLE (kg/<br>km) | DC Cond. Res. at 20 Deg. C Max.<br>(Ohm/Km) | AC Cond. Res. at 90 Deg. C Max.<br>(Ohm/Km) | Inductance at 50<br>60Hz (miliH/Km) | Inductive Reactance at 50 - 60Hz<br>(Ohm/Km) | Impedance at 50 - 60Hz & at 90<br>Deg. C (Ohm/Km) | Cond. Short Circuit current Rating<br>(kAmp/Sec) | *CURRENT CARRYING CAPACITY AT 20<br>°C IN GROUND Amp. | *CURRENT CARRYING CAPACITY AT<br>30 °C IN<br>AIR Amp. |
|----------------------|------------------------------------------------------|------------------------------|-----------------------------|--------------------------------|-------------------------|-------------------------|--------------------------------|-----------------------------|-------------------------------------|---------------------------------------------|---------------------------------------------|-------------------------------------|----------------------------------------------|---------------------------------------------------|--------------------------------------------------|-------------------------------------------------------|-------------------------------------------------------|
| 7                    | 1.5                                                  | 0.6                          | 0.8                         | 10.5                           | 0.9                     | 12.3                    | 1.4                            | 15.2                        | 449                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 18                                                    | 15                                                    |
| 12                   | 1.5                                                  | 0.6                          | 0.8                         | 13.9                           | 1.25                    | 16.4                    | 1.5                            | 19.4                        | 740                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 15                                                    | 12                                                    |
| 19                   | 1.5                                                  | 0.6                          | 0.8                         | 16.3                           | 1.25                    | 18.8                    | 1.6                            | 22.0                        | 970                                 | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 12                                                    | 10                                                    |
| 27                   | 1.5                                                  | 0.6                          | 1.0                         | 20.0                           | 1.6                     | 23.2                    | 1.7                            | 26.7                        | 1416                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                     | 8                                                     |
| 37                   | 1.5                                                  | 0.6                          | 1.0                         | 22.5                           | 1.6                     | 25.7                    | 1.7                            | 29.1                        | 1715                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 9                                                     | 8                                                     |
| 48                   | 1.5                                                  | 0.6                          | 1.0                         | 25.8                           | 1.6                     | 29.0                    | 1.8                            | 32.6                        | 2060                                | 12.1                                        | 15.43                                       | 0.336                               | 0.106                                        | 15.43                                             | 0.21                                             | 7                                                     | 7                                                     |
| 7                    | 2.5                                                  | 0.7                          | 0.8                         | 12.5                           | 0.9                     | 14.3                    | 1.4                            | 17.7                        | 621                                 | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 24                                                    | 20                                                    |
| 12                   | 2.5                                                  | 0.7                          | 0.8                         | 16.6                           | 1.25                    | 19.1                    | 1.6                            | 22.9                        | 1041                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 20                                                    | 17                                                    |
| 19                   | 2.5                                                  | 0.7                          | 1.0                         | 20.0                           | 1.6                     | 23.2                    | 1.7                            | 27.2                        | 1572                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 16                                                    | 14                                                    |
| 27                   | 2.5                                                  | 0.7                          | 1.0                         | 24.0                           | 1.6                     | 27.2                    | 1.8                            | 31.5                        | 2002                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 37                   | 2.5                                                  | 0.7                          | 1.0                         | 27.0                           | 1.6                     | 30.2                    | 1.8                            | 34.5                        | 2429                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 14                                                    | 12                                                    |
| 48                   | 2.5                                                  | 0.7                          | 1.2                         | 31.4                           | 2.0                     | 35.4                    | 2.0                            | 40.2                        | 3309                                | 7.41                                        | 9.45                                        | 0.314                               | 0.099                                        | 9.449                                             | 0.35                                             | 10                                                    | 9                                                     |
| 7                    | 4.0                                                  | 0.7                          | 0.8                         | 14.2                           | 1.25                    | 16.7                    | 1.5                            | 20.3                        | 880                                 | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 31                                                    | 27                                                    |
| 12                   | 4.0                                                  | 0.7                          | 1.0                         | 19.3                           | 1.6                     | 22.5                    | 1.6                            | 26.3                        | 1465                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 26                                                    | 28                                                    |
| 19                   | 4.0                                                  | 0.7                          | 1.0                         | 22.7                           | 1.6                     | 25.9                    | 1.7                            | 29.9                        | 1945                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 20                                                    | 18                                                    |
| 27                   | 4.0                                                  | 0.7                          | 1.0                         | 27.4                           | 1.6                     | 30.6                    | 1.9                            | 35.1                        | 2535                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 18                                                    | 16                                                    |
| 37                   | 4.0                                                  | 0.7                          | 1.2                         | 31.2                           | 2.0                     | 35.2                    | 2.0                            | 40.0                        | 3480                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 18                                                    | 16                                                    |
| 48                   | 4.0                                                  | 0.7                          | 1.2                         | 35.9                           | 2.0                     | 39.9                    | 2.1                            | 44.9                        | 4245                                | 4.61                                        | 5.88                                        | 0.295                               | 0.093                                        | 5.879                                             | 0.56                                             | 13                                                    | 12                                                    |

\*Detail Please Refer the Technical Information Section.

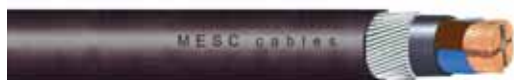
Note:

1. The Marking on outer sheath shall be embossed and the text shall appear on two lines for above 15mm cable diameter and one line for 15mm & below cable diameter along the cable axis approximately equally spaced around the circumference. The letters & figures shall be upright block characters with a minimum height of 3 mm.
2. Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

at the heart of every project

## POWER, MULTI CORE, ARMORED CABLE

CU/ XLPE/PVC/SWA/PVC SPECIFICATION: BS 5467



### APPLICATION

Can be used indoors or outdoors in the cable duct, cable trays, conduits or underground location under mechanical stresses in the power and switching station, local distribution system, industrial plant and commercial building.

### CONSTRUCTION

|                                          |                                                                                                                                                                    |
|------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor                                | Stranded Compacted Sector Shape Annealed Plain Copper to Class 2 of IEC 60228.                                                                                     |
| Insulation                               | Cross linked Polyethylene (XLPE) Type GP8 as per BS 7655 1.2                                                                                                       |
| Color Code #                             | Three Core - Brown, black, grey<br>Four Core - Blue, brown, black, grey                                                                                            |
| Cabling / Laying up                      | Cores are assembled in a concentric layer and assembly is wrapped with a polyester tape.                                                                           |
| Inner Sheath / Bedding                   | Flame Retardant PVC in Black Color compatible to operating temperature of conductor.                                                                               |
| Wire Armour                              | A single layer of galvanized steel wire armor applied over the inner sheath.                                                                                       |
| Over sheath                              | Flame Retardant PVC Type 9 to BS 7655 4.2 and confirming to IEC60332-1. The color of the sheath shall be Black. Other sheath colors are also available on request. |
| Embossing on outer Sheath (refer note 1) | ELECTRIC CABLE 600/1000V BS 5467 NO. OF CORES X SIZE MESC YEAR LENGTH METER MARKING                                                                                |

### TECHNICAL DATA

|                              |                            |
|------------------------------|----------------------------|
| Temperature Range            | - 5°C to 90°C              |
| Voltage Rating               | 600/1000 V                 |
| Voltage Withstand (V/Minute) | 3500 RMS / 5               |
| Min. Bending Radius (mm)     | 8 X Cable Overall Diameter |
| Max Short Circuit Temp (°C)  | 250 (for 5 Second Maximum) |

### TABLE

| NO OF CORE (Nos.) | CONDUCTOR CROSS SECTIONAL AREA (mm²) | INSULATION THICKNESS (mm) | INNER SHEATH THICKNESS (mm) | DIA. OVER INNER SHEATH (mm) | ARMOR WIRE DIA. (mm) | DIA. OVER ARMOR (mm) | OUTER SHEATH THICKNESS (mm) | APPROX OVERALL DIA. (mm) | APPROX. WEIGHT OF CABLE (kg/km) | DC Cond. Res. at 20 Deg. C Max. (Ohm/Km) | AC Cond. Res. at 90 Deg. C Max. (Ohm/Km) | Inductance at 50 60Hz (mH/km) | Inductive Reactance at 50 - 60Hz (Ohm/km) | Impedance at 50 - 60Hz & at 90 Deg. C (Ohm/km) | Cond. Short Circuit current Rating (kAmp/Sec) | *CURRENT CARRYING CAPACITY AT 20 °C IN GROUND Amp. | *CURRENT CARRYING CAPACITY AT 30 °C IN AIR Amp. |
|-------------------|--------------------------------------|---------------------------|-----------------------------|-----------------------------|----------------------|----------------------|-----------------------------|--------------------------|---------------------------------|------------------------------------------|------------------------------------------|-------------------------------|-------------------------------------------|------------------------------------------------|-----------------------------------------------|----------------------------------------------------|-------------------------------------------------|
| 3                 | 25                                   | 0.9                       | 1.0                         | 16.6                        | 1.6                  | 19.8                 | 1.7                         | 23.3                     | 1483                            | 0.727                                    | 0.927                                    | 0.255                         | 0.080                                     | 0.930                                          | 3.53                                          | 143                                                | 130                                             |
| 3                 | 35                                   | 0.9                       | 1.0                         | 18.5                        | 1.6                  | 21.7                 | 1.8                         | 25.3                     | 1849                            | 0.524                                    | 0.668                                    | 0.248                         | 0.078                                     | 0.673                                          | 4.95                                          | 173                                                | 160                                             |
| 3                 | 50                                   | 1.0                       | 1.0                         | 21.3                        | 1.6                  | 24.5                 | 1.8                         | 28.2                     | 2299                            | 0.387                                    | 0.493                                    | 0.245                         | 0.077                                     | 0.499                                          | 7.07                                          | 205                                                | 195                                             |
| 3                 | 70                                   | 1.1                       | 1.0                         | 24.4                        | 1.6                  | 27.6                 | 1.9                         | 31.5                     | 3001                            | 0.268                                    | 0.342                                    | 0.242                         | 0.076                                     | 0.268                                          | 9.90                                          | 252                                                | 247                                             |
| 3                 | 95                                   | 1.1                       | 1.2                         | 27.7                        | 2.0                  | 31.7                 | 2.1                         | 35.9                     | 4111                            | 0.193                                    | 0.25                                     | 0.236                         | 0.074                                     | 0.257                                          | 13.44                                         | 303                                                | 305                                             |
| 4                 | 25                                   | 0.9                       | 1.0                         | 19.6                        | 1.6                  | 22.8                 | 1.7                         | 26.3                     | 1845                            | 0.727                                    | 0.927                                    | 0.255                         | 0.080                                     | 0.930                                          | 3.53                                          | 143                                                | 130                                             |
| 4                 | 35                                   | 0.9                       | 1.0                         | 21.9                        | 1.6                  | 25.1                 | 1.8                         | 28.8                     | 2331                            | 0.524                                    | 0.668                                    | 0.248                         | 0.078                                     | 0.673                                          | 4.95                                          | 173                                                | 160                                             |
| 4                 | 50                                   | 1.0                       | 1.0                         | 25.4                        | 1.6                  | 28.6                 | 1.9                         | 32.4                     | 2965                            | 0.387                                    | 0.493                                    | 0.245                         | 0.077                                     | 0.499                                          | 7.07                                          | 205                                                | 195                                             |
| 4                 | 70                                   | 1.1                       | 1.2                         | 29.6                        | 2.0                  | 33.6                 | 2.1                         | 37.8                     | 4214                            | 0.268                                    | 0.342                                    | 0.242                         | 0.076                                     | 0.268                                          | 9.90                                          | 252                                                | 247                                             |
| 4                 | 95                                   | 1.1                       | 1.2                         | 33.2                        | 2.0                  | 37.2                 | 2.2                         | 41.6                     | 5356                            | 0.193                                    | 0.25                                     | 0.236                         | 0.074                                     | 0.257                                          | 13.44                                         | 303                                                | 305                                             |

#Other Insulation colour is available on request.

\*Detail Please Refer the Technical Information Section.

Note:

- The Marking on outer sheath shall be embossed and the text shall appear on two lines for above 15mm cable diameter and one line for 15mm & below cable diameter along the cable axis approximately equally spaced around the circumference. The letters & figures shall be upright block characters with a minimum height of 3 mm.
- Other Special Sheath Materials are also available with IEC 60332-3 CAT C, UV /Sunlight resistance/ Oil Resistance.

## SINGLE & MULTI CORE RUBBER CABLE (HO7RN-F)

SPECIFICATION: BS EN 50525-2.21 / BS 7919



### APPLICATION

These heavy duty rubber sheathed cables are suitable for use in dry, damp and wet locations in open air and in workshops having an explosive atmosphere for medium mechanical stresses. Suitable for use with industrial and agricultural appliances, heating installations, electric tools and also for transportable motors and machines. Also suitable for fixed installations on plaster, in temporary residential buildings and for wiring of constructional components like lifts and cranes. Can be used up to 1000 volts for fixed installation and as rotor connection cable for motors.

### CONSTRUCTION

|              |                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor    | Plain annealed copper flexible as per class 5 of IEC 60228.                                                                                                                                                                                                                                                                                                                                                     |
| Insulation   | Rubber Type EI 4 as per BS EN 50363-1.                                                                                                                                                                                                                                                                                                                                                                          |
| Color Code   | Single core : Black<br>Two core : Blue & Brown.<br>Three core : Green, Blue & Brown.<br>Four core : Green, Black, and Blue & Brown.<br>Five core : Green, Black, Blue, Brown & Black.<br>Six & Above : In the outer layer one core coloured Light Blue, the consecutive core coloured Brown and The other cores coloured Black. In the other layers one core coloured Brown and the other Cores coloured Black. |
| Assembly#    | Cores twisted together to make a round assembly. Where center filler is required it is composed of cotton. A binder tape is applied over the assembly if required.                                                                                                                                                                                                                                              |
| Outer Sheath | Black coloured rubber Type EM 2 as per BS EN 50363-2-1. Sheath material is oil resistant and flame retardant as per IEC-60332-1. The sheath shall fill the outer interstices between the cores                                                                                                                                                                                                                  |

### TECHNICAL DATA

|                          |                                                                                                   |
|--------------------------|---------------------------------------------------------------------------------------------------|
| Temperature Range        | - 30°C to 60°C                                                                                    |
| Voltage Rating           | 450/750 V                                                                                         |
| Min. Bending Radius (mm) | 4 X Over all Diameter (for fixed installation)<br>5 X Over all Diameter (for guiding over roller) |

### TABLE

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA<br>(mm <sup>2</sup> ) | INSULATION THICKNESS<br>(mm) | OUTER SHEATH<br>THICKNESS<br>(mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT<br>(kg/km) | CONDUCTOR<br>RESISTANCE<br>AT 20 °C (MAX.)<br>Ω/km | CURRENT CARRING<br>CAPACITY AT 30 °C IN<br>FREE AIR (ONE PHASE)<br>Amp. | CURRENT CARRING<br>CAPACITY AT 30 °C IN<br>FREE AIR<br>(THREE PHASE) Amp. |
|----------------------|---------------------------------------------------------|------------------------------|-----------------------------------|-----------------------------|---------------------------|----------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 1                    | 1.5                                                     | 0.8                          | 1.4                               | 6.2                         | 52                        | 13.3                                               | 15                                                                      | --                                                                        |
| 1                    | 2.5                                                     | 0.9                          | 1.4                               | 6.8                         | 67                        | 7.98                                               | 20                                                                      | --                                                                        |
| 1                    | 4                                                       | 1.0                          | 1.5                               | 7.8                         | 94                        | 4.95                                               | 33                                                                      | --                                                                        |
| 1                    | 6                                                       | 1.0                          | 1.6                               | 6.                          | 122                       | 3.30                                               | 42                                                                      | --                                                                        |
| 1                    | 10                                                      | 1.2                          | 1.8                               | 10.4                        | 190                       | 1.91                                               | 57                                                                      | --                                                                        |
| 1                    | 16                                                      | 1.2                          | 1.9                               | 11.6                        | 260                       | 1.21                                               | 76                                                                      | --                                                                        |
| 1                    | 25                                                      | 1.4                          | 2                                 | 13.5                        | 375                       | 0.780                                              | 100                                                                     | --                                                                        |
| 1                    | 35                                                      | 1.4                          | 2.2                               | 15.1                        | 497                       | 0.554                                              | 120                                                                     | --                                                                        |
| 1                    | 50                                                      | 1.6                          | 2.4                               | 17.5                        | 691                       | 0.386                                              | 150                                                                     | --                                                                        |
| 1                    | 70                                                      | 1.6                          | 2.6                               | 19.8                        | 956                       | 0.272                                              | 180                                                                     | --                                                                        |
| 1                    | 95                                                      | 1.8                          | 2.8                               | 22.3                        | 1240                      | 0.206                                              | 220                                                                     | --                                                                        |
| 2                    | 1                                                       | 0.8                          | 1.3                               | 8.7                         | 97                        | 19.5                                               | 10                                                                      | --                                                                        |

| NO OF CORE<br>(Nos.) | CONDUCTOR CROSS<br>SECTIONAL AREA<br>(mm <sup>2</sup> ) | INSULATION THICKNESS<br>(mm) | OUTER SHEATH<br>THICKNESS<br>(mm) | APPROX OVERALL<br>DIA. (mm) | APPROX. WEIGHT<br>(kg/km) | CONDUCTOR<br>RESISTANCE<br>AT 20 °C (MAX.)<br>Ω/km | CURRENT CARRING<br>CAPACITY AT 30 °C IN<br>FREE AIR (ONE PHASE)<br>Amp. | CURRENT CARRING<br>CAPACITY AT 30 °C IN<br>FREE AIR<br>(THREE PHASE) Amp. |
|----------------------|---------------------------------------------------------|------------------------------|-----------------------------------|-----------------------------|---------------------------|----------------------------------------------------|-------------------------------------------------------------------------|---------------------------------------------------------------------------|
| 2                    | 1.5                                                     | 0.8                          | 1.5                               | 9.6                         | 120                       | 13.3                                               | 15                                                                      | --                                                                        |
| 2                    | 2.5                                                     | 0.9                          | 1.7                               | 11.3                        | 173                       | 7.98                                               | 20                                                                      | --                                                                        |
| 2                    | 4                                                       | 1.0                          | 1.8                               | 14.0                        | 239                       | 4.95                                               | 33                                                                      | --                                                                        |
| 2                    | 6                                                       | 1.0                          | 2.0                               | 16.6                        | 315                       | 3.30                                               | 42                                                                      | --                                                                        |
| 2                    | 10                                                      | 1.2                          | 3.1                               | 19.7                        | 565                       | 1.91                                               | 57                                                                      | --                                                                        |
| 2                    | 16                                                      | 1.2                          | 3.3                               | 22.2                        | 761                       | 1.21                                               | 76                                                                      | --                                                                        |
| 2                    | 25                                                      | 1.4                          | 3.6                               | 26.2                        | 1098                      | 0.780                                              | 100                                                                     | --                                                                        |
| 3                    | 1                                                       | 0.8                          | 1.4                               | 9.4                         | 118                       | 19.5                                               | 10                                                                      | 10                                                                        |
| 3                    | 1.5                                                     | 0.8                          | 1.6                               | 10.3                        | 146                       | 13.3                                               | 15                                                                      | 15                                                                        |
| 3                    | 2.5                                                     | 0.9                          | 1.8                               | 12.1                        | 210                       | 7.98                                               | 20                                                                      | 20                                                                        |
| 3                    | 4                                                       | 1.0                          | 1.9                               | 14.0                        | 297                       | 4.95                                               | 33                                                                      | 28                                                                        |
| 3                    | 6                                                       | 1.0                          | 2.1                               | 15.6                        | 390                       | 3.30                                               | 42                                                                      | 36                                                                        |
| 3                    | 10                                                      | 1.2                          | 3.3                               | 21.2                        | 704                       | 1.91                                               | 57                                                                      | 49                                                                        |
| 3                    | 16                                                      | 1.2                          | 3.5                               | 23.8                        | 956                       | 1.21                                               | 76                                                                      | 66                                                                        |
| 4                    | 1                                                       | 0.8                          | 1.0                               | 10.4                        | 145                       | 19.5                                               | 10                                                                      | 10                                                                        |
| 4                    | 1.5                                                     | 0.8                          | 1.7                               | 11.3                        | 177                       | 13.3                                               | 15                                                                      | 15                                                                        |
| 4                    | 2.5                                                     | 0.9                          | 1.9                               | 13.3                        | 257                       | 7.98                                               | 20                                                                      | 20                                                                        |
| 4                    | 4                                                       | 1.0                          | 2.0                               | 15.4                        | 364                       | 4.95                                               | 33                                                                      | 28                                                                        |
| 4                    | 6                                                       | 1.0                          | 2.3                               | 17.4                        | 490                       | 3.30                                               | 42                                                                      | 36                                                                        |
| 4                    | 10                                                      | 1.2                          | 3.4                               | 23.0                        | 851                       | 1.91                                               | 57                                                                      | 49                                                                        |
| 4                    | 16                                                      | 1.2                          | 3.6                               | 25.9                        | 1167                      | 1.21                                               | 76                                                                      | 66                                                                        |
| 5                    | 1                                                       | 0.8                          | 1.6                               | 11.4                        | 175                       | 19.5                                               | 10                                                                      | 10                                                                        |
| 5                    | 1.5                                                     | 0.8                          | 1.8                               | 12.5                        | 217                       | 13.3                                               | 15                                                                      | 15                                                                        |
| 5                    | 2.5                                                     | 0.9                          | 2.0                               | 14.7                        | 313                       | 7.98                                               | 20                                                                      | 20                                                                        |
| 5                    | 4                                                       | 1.0                          | 2.2                               | 17.1                        | 447                       | 4.95                                               | 33                                                                      | 28                                                                        |
| 5                    | 6                                                       | 1.0                          | 2.5                               | 19.3                        | 600                       | 3.30                                               | 42                                                                      | 36                                                                        |
| 5                    | 10                                                      | 1.2                          | 3.6                               | 25.4                        | 1034                      | 1.91                                               | 57                                                                      | 49                                                                        |
| 6                    | 1.5                                                     | 0.8                          | 2.5                               | 15.1                        | 301                       | 13.3                                               | 10                                                                      | --                                                                        |
| 12                   | 1.5                                                     | 0.8                          | 2.9                               | 19.7                        | 528                       | 13.3                                               | 7                                                                       | --                                                                        |
| 18                   | 1.5                                                     | 0.8                          | 3.2                               | 23.1                        | 743                       | 13.3                                               | 6                                                                       | --                                                                        |
| 24                   | 1.5                                                     | 0.8                          | 3.5                               | 26.9                        | 971                       | 13.3                                               | 6                                                                       | --                                                                        |
| 6                    | 2.5                                                     | 0.9                          | 2.7                               | 17.5                        | 423                       | 7.98                                               | 14                                                                      | --                                                                        |
| 12                   | 2.5                                                     | 0.9                          | 3.1                               | 22.8                        | 747                       | 7.98                                               | 10                                                                      | --                                                                        |
| 18                   | 2.5                                                     | 0.9                          | 3.5                               | 27.0                        | 1069                      | 7.98                                               | 9                                                                       | --                                                                        |
| 6                    | 4                                                       | 1.0                          | 2.9                               | 20.1                        | 590                       | 4.95                                               | 24                                                                      | --                                                                        |
| 12                   | 4                                                       | 1.0                          | 3.5                               | 26.8                        | 1074                      | 4.95                                               | 17                                                                      | --                                                                        |

If more than 3 conductors are loaded simultaneously, the current rating must be adjust with following factor:

| Ambient temperature | 5    | 7    | 8    | 12   | 18   | 24   |
|---------------------|------|------|------|------|------|------|
| Correction factor   | 0.73 | 0.65 | 0.62 | 0.53 | 0.45 | 0.40 |

Correction factors for ambient temperature.

| Ambient temperature | 35   | 40   | 45   | 50   | 55   |
|---------------------|------|------|------|------|------|
| Correction factor   | 0.91 | 0.82 | 0.71 | 0.57 | 0.41 |

#Assembly of core is not applicable for single core.

Packing: Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

# FIRE RESISTANT CABLE 300/500V

SCREENED, LOW SMOKE HALOGEN FREE SHEATH

SPECIFICATION: BS 7629-1, BS 5839-1, BS EN 50200 & BS 6387



## APPLICATION

Used for fire alarm system, voice alarm system, emergency lighting for the building.

## CONSTRUCTION

|                 |                                                                                                                                                                                                                                                                                                                                                                         |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Conductor       | Plain annealed solid copper as per class 1 of IEC 60228.                                                                                                                                                                                                                                                                                                                |
| Insulation      | Cross-Linked Thermosetting Type EI 2 as per BS EN 50363-1.                                                                                                                                                                                                                                                                                                              |
| Color Code      | Two core : Brown & Blue.<br>Three core : Brown, Black & Grey.<br>Four core : Blue, Brown, Black & Grey.                                                                                                                                                                                                                                                                 |
| Assembly        | Cores are assembled in the color sequence as mentioned above, A nonmetallic tape is applied over the assembly.                                                                                                                                                                                                                                                          |
| Screen          | A laminated metallic tape, with minimum metal part of 10 $\mu$ m is applied longitudinally with a minimum overlap of 1 mm and firmly bonded to the outer sheath. Metallic element of tape is in contact with the uninsulated circuit protective conductor. Protective conductor is annealed tinned copper with the same nominal cross section as the circuit conductor. |
| Outer Sheath    | Extruded Red Low smoke Halogen free compound Type LTS3 as per BS 7655-6.1.                                                                                                                                                                                                                                                                                              |
| Marking Example | MESC PYRO-SI Size 300/500 V BS 7929-1.                                                                                                                                                                                                                                                                                                                                  |

## TECHNICAL DATA

|                          |                                                                   |
|--------------------------|-------------------------------------------------------------------|
| Temp Range               | 30°C to 105°C                                                     |
| Voltage Grade            | 300/500 V                                                         |
| Dielectric strength test | 2000 V <sub>AC</sub> for 1 minute (core to core & core to screen) |

## FIRE PERFORMANCE

|                                      |                                                                         |
|--------------------------------------|-------------------------------------------------------------------------|
| Fire resistance                      | BS 6387 C W Z, BSEN 50200 PH30 & BSEN 50200 Annexure E                  |
| Flame retardance                     | IEC 60332-1-2 on single core and IEC 60332-3-24 [CAT C] for bunch cable |
| Corrosive & acid gas emission        | $\leq 0.5\%$ (BS EN 50267-2-1)                                          |
| Smoke Emission (Transmission value)  | $\geq 80\%$ (BS EN 61034-2)                                             |
| Limiting Oxygen index (outer sheath) | $\geq 30\%$ (ASTM D2863)                                                |

| NO OF CORE<br>(Nos.) | CONDUCTOR<br>CROSS<br>SECTIONAL<br>AREA (mm <sup>2</sup> ) | INSULATION<br>THICKNESS<br>(mm) | OUTER SHEATH<br>THICKNESS<br>(mm) | APPROX<br>OVERALL<br>DIA. (mm) | APPROX.<br>WEIGHT (kg/<br>km) | CONDUCTOR<br>RESISTANCE<br>AT 20 °C (MAX.)<br>$\Omega$ /km |
|----------------------|------------------------------------------------------------|---------------------------------|-----------------------------------|--------------------------------|-------------------------------|------------------------------------------------------------|
| 2                    | 1.0                                                        | 0.6                             | 0.9                               | 7.6                            | 82                            | 18.1                                                       |
| 3                    | 1.0                                                        | 0.6                             | 0.9                               | 8.0                            | 100                           | 12.1                                                       |
| 4                    | 1.0                                                        | 0.6                             | 1.0                               | 8.8                            | 120                           | 7.41                                                       |
| 2                    | 1.5                                                        | 0.7                             | 0.9                               | 8.5                            | 105                           | 18.1                                                       |
| 3                    | 1.5                                                        | 0.7                             | 0.9                               | 9.0                            | 131                           | 12.1                                                       |
| 4                    | 1.5                                                        | 0.7                             | 1.0                               | 9.9                            | 160                           | 7.41                                                       |
| 2                    | 2.5                                                        | 0.8                             | 1.0                               | 9.9                            | 151                           | 18.1                                                       |
| 3                    | 2.5                                                        | 0.8                             | 1.0                               | 10.5                           | 187                           | 12.1                                                       |
| 4                    | 2.5                                                        | 0.8                             | 1.1                               | 11.5                           | 230                           | 7.41                                                       |

Packing: Packing is available in Coil/Reel/Drum with Meters/Yards/Feet.  
Other lengths are available upon request.

\* LPCB Cable Type tested at MESC - KSA

## UTP CAT 6

Technical Data for Non-Plenum  
LAN Cable — Category - 6



### APPLICATION

These cables are intended to be used for low loss extended frequency data systems that operate up to 250 MHz.

#### Reference Specifications

TIA/EIA-568-B.2-1 & UL444

#### Type Designation

UTP CAT 6- Unshielded Twisted Pairs. NEC TYPE CM

#### Construction

4 Pairs 23 AWG Solid Copper, polyethylene Insulated, twisted pairs assembled with a center separator and Grey PVC jacketed.

| SI No. | Technical Parameter                     |        |     | Unit    | Requirement |       |
|--------|-----------------------------------------|--------|-----|---------|-------------|-------|
| 1      | Characteristic Impedance(Up to 100 MHz) |        |     | Ohm     | 100+/-15    | (Nom) |
| 2      | Attenuation (ATT)                       |        |     | dB/100m |             |       |
| a)     | At frequency of                         | 1.00   | MHz |         | 2.10        | (Max) |
| b)     | At frequency of                         | 4.00   | MHz |         | 4.00        | (Max) |
| c)     | At frequency of                         | 8.00   | MHz |         | 5.70        | (Max) |
| d)     | At frequency of                         | 10.00  | MHz |         | 6.30        | (Max) |
| e)     | At frequency of                         | 16.00  | MHz |         | 8.00        | (Max) |
| f)     | At frequency of                         | 20.00  | MHz |         | 9.00        | (Max) |
| g)     | At frequency of                         | 25.00  | MHz |         | 10.10       | (Max) |
| h)     | At frequency of                         | 31.25  | MHz |         | 11.40       | (Max) |
| i)     | At frequency of                         | 62.50  | MHz |         | 16.50       | (Max) |
| j)     | At frequency of                         | 100.00 | MHz |         | 21.30       | (Max) |
| k)     | At frequency of                         | 200.00 | MHz |         | 31.50       | (Max) |
| l)     | At frequency of                         | 250.00 | MHz |         | 35.90       | (Max) |
| 3      | Return Loss (RL)                        |        |     | (dB)    |             |       |
| a)     | At frequency of                         | 1.00   | MHz |         | 20.00       | (Min) |
| b)     | At frequency of                         | 4.00   | MHz |         | 23.01       | (Min) |
| c)     | At frequency of                         | 8.00   | MHz |         | 24.52       | (Min) |
| d)     | At frequency of                         | 10.00  | MHz |         | 25.00       | (Min) |
| e)     | At frequency of                         | 16.00  | MHz |         | 25.00       | (Min) |
| f)     | At frequency of                         | 20.00  | MHz |         | 25.00       | (Min) |
| g)     | At frequency of                         | 25.00  | MHz |         | 24.32       | (Min) |
| h)     | At frequency of                         | 31.25  | MHz |         | 23.64       | (Min) |
| i)     | At frequency of                         | 62.50  | MHz |         | 21.54       | (Min) |
| j)     | At frequency of                         | 100.00 | MHz |         | 20.11       | (Min) |
| k)     | At frequency of                         | 125.00 | MHz |         | 19.43       | (Min) |
| l)     | At frequency of                         | 150.00 | MHz |         | 18.87       | (Min) |
| m)     | At frequency of                         | 200    | MHz |         | 18.00       | (Min) |
| n)     | At frequency of                         | 250.00 | MHz |         | 17.32       | (Min) |
| 4      | Near End Cross Talk (NEXT)              |        |     | (dB)    |             |       |
| a)     | At frequency of                         | 1.00   | MHz |         | 74.30       | (Min) |
| b)     | At frequency of                         | 4.00   | MHz |         | 65.26       | (Min) |
| c)     | At frequency of                         | 8.00   | MHz |         | 60.75       | (Min) |
| d)     | At frequency of                         | 10.00  | MHz |         | 59.30       | (Min) |
| e)     | At frequency of                         | 16.00  | MHz |         | 56.24       | (Min) |
| f)     | At frequency of                         | 20.00  | MHz |         | 54.78       | (Min) |
| g)     | At frequency of                         | 25.00  | MHz |         | 53.33       | (Min) |
| h)     | At frequency of                         | 31.25  | MHz |         | 51.88       | (Min) |
| i)     | At frequency of                         | 62.50  | MHz |         | 47.36       | (Min) |
| j)     | At frequency of                         | 100.00 | MHz |         | 44.30       | (Min) |
| k)     | At frequency of                         | 125.00 | MHz |         | 42.85       | (Min) |
| l)     | At frequency of                         | 150.00 | MHz |         | 41.66       | (Min) |
| m)     | At frequency of                         | 200.00 | MHz |         | 39.78       | (Min) |
| n)     | At frequency of                         | 250.00 | MHz |         | 38.33       | (Min) |

| Sl No. | Technical Parameter                             |        |     | Unit  | Requirement |       |
|--------|-------------------------------------------------|--------|-----|-------|-------------|-------|
| 5      | Equal Level Far End Cross Talk (ELFEXT)         |        |     | (dB)  |             |       |
| a)     | At frequency of                                 | 1.00   | MHz |       | 67.80       | (Min) |
| b)     | At frequency of                                 | 4.00   | MHz |       | 55.76       | (Min) |
| c)     | At frequency of                                 | 8.00   | MHz |       | 49.74       | (Min) |
| d)     | At frequency of                                 | 10.00  | MHz |       | 47.80       | (Min) |
| e)     | At frequency of                                 | 16.00  | MHz |       | 43.72       | (Min) |
| f)     | At frequency of                                 | 20.00  | MHz |       | 41.78       | (Min) |
| g)     | At frequency of                                 | 25.00  | MHz |       | 39.84       | (Min) |
| h)     | At frequency of                                 | 31.25  | MHz |       | 37.90       | (Min) |
| i)     | At frequency of                                 | 62.50  | MHz |       | 31.88       | (Min) |
| j)     | At frequency of                                 | 100.00 | MHz |       | 27.80       | (Min) |
| k)     | At frequency of                                 | 125.00 | MHz |       | 25.86       | (Min) |
| l)     | At frequency of                                 | 150.00 | MHz |       | 24.28       | (Min) |
| m)     | At frequency of                                 | 200.00 | MHz |       | 21.78       | (Min) |
| n)     | At frequency of                                 | 250.00 | MHz |       | 19.84       | (Min) |
| 6      | Power Sum Near End Cross Talk (PSNEXT)          |        |     | (dB)  |             |       |
| a)     | At frequency of                                 | 1.00   | MHz |       | 72.30       | (Min) |
| b)     | At frequency of                                 | 4.00   | MHz |       | 63.27       | (Min) |
| c)     | At frequency of                                 | 8.00   | MHz |       | 58.75       | (Min) |
| d)     | At frequency of                                 | 10.00  | MHz |       | 57.30       | (Min) |
| e)     | At frequency of                                 | 16.00  | MHz |       | 54.24       | (Min) |
| f)     | At frequency of                                 | 20.00  | MHz |       | 52.78       | (Min) |
| g)     | At frequency of                                 | 25.00  | MHz |       | 51.33       | (Min) |
| h)     | At frequency of                                 | 31.25  | MHz |       | 49.88       | (Min) |
| i)     | At frequency of                                 | 62.50  | MHz |       | 45.36       | (Min) |
| j)     | At frequency of                                 | 100.00 | MHz |       | 42.30       | (Min) |
| k)     | At frequency of                                 | 125.00 | MHz |       | 40.84       | (Min) |
| l)     | At frequency of                                 | 150.00 | MHz |       | 39.66       | (Min) |
| m)     | At frequency of                                 | 200.00 | MHz |       | 37.78       | (Min) |
| n)     | At frequency of                                 | 250.00 | MHz |       | 36.33       | (Min) |
| 7      | Power Sum Equal Level End Cross Talk (PSELFEXT) |        |     | (dB)  |             |       |
| a)     | At frequency of                                 | 1.00   | MHz |       | 64.80       | (Min) |
| b)     | At frequency of                                 | 4.00   | MHz |       | 52.76       | (Min) |
| c)     | At frequency of                                 | 8.00   | MHz |       | 46.74       | (Min) |
| d)     | At frequency of                                 | 10.00  | MHz |       | 44.80       | (Min) |
| e)     | At frequency of                                 | 16.00  | MHz |       | 40.72       | (Min) |
| f)     | At frequency of                                 | 20.00  | MHz |       | 38.78       | (Min) |
| g)     | At frequency of                                 | 25.00  | MHz |       | 36.84       | (Min) |
| h)     | At frequency of                                 | 31.25  | MHz |       | 34.90       | (Min) |
| i)     | At frequency of                                 | 62.50  | MHz |       | 28.88       | (Min) |
| j)     | At frequency of                                 | 100.00 | MHz |       | 24.80       | (Min) |
| k)     | At frequency of                                 | 125.00 | MHz |       | 22.86       | (Min) |
| l)     | At frequency of                                 | 150.00 | MHz |       | 21.28       | (Min) |
| m)     | At frequency of                                 | 200.00 | MHz |       | 18.78       | (Min) |
| n)     | At frequency of                                 | 250.00 | MHz |       | 16.84       | (Min) |
| 8      | Operating Temperature                           |        |     | °C    | -20 to 80   |       |
| 9      | Approximate Overall Diameter                    |        |     | mm    | 5.7         |       |
| 10     | Approximate Weight                              |        |     | Kg/Km | 44          |       |

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## TECHNICAL INFORMATION

### 0.6/1 KV CABLES CURRENT CARRYING CAPACITY (AMPERE)

| For PVC Insulated Cables       |                   |        |               |        |                    |        |                                                   |
|--------------------------------|-------------------|--------|---------------|--------|--------------------|--------|---------------------------------------------------|
| Nominal Cross<br>Section sq.mm | 3 & 4 Core Cables |        | 2 Core Cables |        | Single Core Cables |        | 5 Core<br>& above                                 |
|                                | In Ground         | In Air | In Ground     | In Air | In Ground          | In Air |                                                   |
| 1.5                            | 26                | 18.5   | 32            | 20     | 40                 | 26     | For<br>Multi core<br>cables<br>see below<br>table |
| 2.5                            | 34                | 25     | 42            | 27     | 54                 | 35     |                                                   |
| 4                              | 44                | 34     | 54            | 37     | 70                 | 46     |                                                   |
| 6                              | 56                | 43     | 68            | 48     | 90                 | 58     |                                                   |
| 10                             | 75                | 60     | 90            | 66     | 122                | 79     |                                                   |
| 16                             | 98                | 80     | 116           | 89     | 160                | 105    |                                                   |
| 25                             | 128               | 106    | 150           | 118    | 206                | 140    |                                                   |
| 35                             | 157               | 131    | 181           | 145    | 249                | 174    |                                                   |
| 50                             | 185               | 159    | 215           | 176    | 296                | 212    |                                                   |
| 70                             | 228               | 202    | 264           | 224    | 365                | 269    |                                                   |
| 95                             | 275               | 244    | 317           | 271    | 438                | 331    |                                                   |
| 120                            | 313               | 282    | 360           | 314    | 499                | 386    |                                                   |
| 150                            | 353               | 324    | 406           | 361    | 561                | 442    |                                                   |
| 185                            | 399               | 371    | 458           | 412    | 637                | 511    |                                                   |
| 240                            | 464               | 436    | 537           | 484    | 743                | 612    |                                                   |
| 300                            | 524               | 481    | 609           | 549    | 843                | 707    |                                                   |
| 400                            | 600               | 560    | 729           | 657    | 986                | 859    |                                                   |
| 500                            | -                 | -      | -             | 749    | 1125               | 1000   |                                                   |

| Nominal<br>Cross<br>Section<br>sq.mm | For XLPE Insulated Cables |        |               |        |                    |        | 5 Core<br>& above                                 |
|--------------------------------------|---------------------------|--------|---------------|--------|--------------------|--------|---------------------------------------------------|
|                                      | 3 & 4 Core Cables         |        | 2 Core Cables |        | Single Core Cables |        |                                                   |
|                                      | In Ground                 | In Air | In Ground     | In Air | In Ground          | In Air |                                                   |
| 1.5                                  | 30                        | 24     | 37            | 26     | 38                 | 32     | For<br>Multi core<br>cables<br>see below<br>table |
| 2.5                                  | 40                        | 32     | 49            | 35     | 51                 | 43     |                                                   |
| 4                                    | 52                        | 42     | 67            | 46     | 66                 | 56     |                                                   |
| 6                                    | 64                        | 53     | 78            | 59     | 82                 | 71     |                                                   |
| 10                                   | 86                        | 73     | 103           | 80     | 109                | 96     |                                                   |
| 16                                   | 111                       | 96     | 131           | 107    | 139                | 128    |                                                   |
| 25                                   | 143                       | 130    | 168           | 145    | 179                | 173    |                                                   |
| 35                                   | 173                       | 160    | 199           | 177    | 213                | 212    |                                                   |
| 50                                   | 205                       | 195    | 238           | 216    | 251                | 258    |                                                   |
| 70                                   | 252                       | 247    | 292           | 274    | 307                | 328    |                                                   |
| 95                                   | 303                       | 305    | 349           | 339    | 366                | 404    |                                                   |
| 120                                  | 346                       | 355    | 398           | 395    | 416                | 471    |                                                   |
| 150                                  | 390                       | 407    | 449           | 453    | 465                | 541    |                                                   |
| 185                                  | 441                       | 469    | 506           | 521    | 526                | 626    |                                                   |
| 240                                  | 511                       | 551    | 591           | 612    | 610                | 749    |                                                   |
| 300                                  | 580                       | 638    | 674           | 728    | 689                | 864    |                                                   |
| 400                                  | 663                       | 746    | 806           | 875    | 788                | 1018   |                                                   |
| 500                                  | -                         | -      | -             | -      | 889                | 1173   |                                                   |

Above current carrying capacities are based on the following conditions:

#### Laying in Conduit

Ambient temperature : 30deg C  
Load factor : 1.0

#### Laying in soil

Ambient temperature : 20deg C  
Load factor : 0.7  
Thermal resistivity of the soil : 1 K.m/W

#### Laying in air

Ambient temperature : 30deg C  
Load factor : 1.0

Depth of lying : 70 cm  
Flat formation clearance : 7 cm

Cables are protected from direct sunlight.

#### Rating factors for multicore cables

| No. of Cores      | 5    | 7    | 10   | 14   | 19   | 24   | 40   | 61   |
|-------------------|------|------|------|------|------|------|------|------|
| Factors in Ground | 0.7  | 0.6  | 0.5  | 0.45 | 0.4  | 0.35 | 0.3  | 0.25 |
| Factors in Air    | 0.75 | 0.65 | 0.55 | 0.5  | 0.45 | 0.4  | 0.35 | 0.3  |

## TECHNICAL INFORMATION

### 0.6/1 KV CABLES CURRENT CARRYING CAPACITY

For cable installation in other conditions, the current rating can be determined by the use of various rating factors given hereunder:

#### INSTALLATION IN GROUND

A. Factors for variation in ambient temperature and thermal resistivity of the soil.

| Insulation Type | Thermal Resistivity of the soil K.m/W | 0.7  |      | 1.0  |      | 1.5  |      | 2.5     |
|-----------------|---------------------------------------|------|------|------|------|------|------|---------|
|                 | Load Factor $\rho$                    | 0.7  | 1.0  | 0.7  | 1.0  | 0.7  | 1.0  | 0.7-1.0 |
|                 | Soil Temperature                      |      |      |      |      |      |      |         |
| XLPE            | 10                                    | 1.16 | 1.05 | 1.05 | 0.98 | 0.95 | 0.91 | 0.86    |
|                 | 15                                    | 1.14 | 1.03 | 1.02 | 0.95 | 0.92 | 0.89 | 0.84    |
|                 | 20                                    | 1.12 | 1    | 1    | 0.93 | 0.9  | 0.86 | 0.81    |
|                 | 25                                    |      |      | 0.98 | 0.9  | 0.87 | 0.84 | 0.78    |
|                 | 30                                    |      |      | 0.95 | 0.88 | 0.84 | 0.81 | 0.75    |
|                 | 35                                    |      |      |      |      | 0.82 | 0.78 | 0.72    |
|                 | 40                                    |      |      |      |      |      |      | 0.68    |
| PVC             | 10                                    | 1.19 | 1.06 | 1.06 | 0.97 | 0.94 | 0.89 | 0.83    |
|                 | 15                                    | 1.17 | 1.03 | 1.03 | 0.94 | 0.91 | 0.86 | 0.79    |
|                 | 20                                    | 1.14 | 1.01 | 1    | 0.91 | 0.87 | 0.83 | 0.76    |
|                 | 25                                    |      |      | 0.97 | 0.88 | 0.84 | 0.79 | 0.72    |
|                 | 30                                    |      |      | 0.94 | 0.85 | 0.8  | 0.76 | 0.68    |
|                 | 35                                    |      |      |      |      | 0.77 | 0.72 | 0.63    |
|                 | 40                                    |      |      |      |      |      |      | 0.59    |

B. Factors for grouping in soil Single core cables in flat formation Clearance between systems: 7 cm.

| Insulation Type | Load Factor                           | 0.7  |      |      |      | 1.0     |
|-----------------|---------------------------------------|------|------|------|------|---------|
|                 | Thermal Resistivity of the soil K.m/W | 0.7  | 1.0  | 1.5  | 2.5  | 0.7-2.5 |
|                 | No. of systems in the trench          |      |      |      |      |         |
| XLPE            | 1                                     | 0.99 | 1    | 1.01 | 1.03 | 0.85    |
|                 | 2                                     | 0.86 | 0.87 | 0.88 | 0.88 | 0.71    |
|                 | 3                                     | 0.77 | 0.77 | 0.78 | 0.79 | 0.62    |
|                 | 4                                     | 0.73 | 0.73 | 0.74 | 0.74 | 0.58    |
|                 | 5                                     | 0.69 | 0.7  | 0.7  | 0.71 | 0.55    |
|                 | 6                                     | 0.67 | 0.68 | 0.68 | 0.69 | 0.53    |
|                 | 8                                     | 0.64 | 0.65 | 0.65 | 0.65 | 0.52    |
|                 | 10                                    | 0.62 | 0.63 | 0.63 | 0.63 | 0.49    |
| PVC             | 1                                     | 0.98 | 1    | 1.01 | 1.02 | 0.85    |
|                 | 2                                     | 0.86 | 0.87 | 0.88 | 0.89 | 0.71    |
|                 | 3                                     | 0.77 | 0.78 | 0.79 | 0.79 | 0.62    |
|                 | 4                                     | 0.73 | 0.74 | 0.74 | 0.75 | 0.58    |
|                 | 5                                     | 0.7  | 0.7  | 0.71 | 0.71 | 0.55    |
|                 | 6                                     | 0.68 | 0.68 | 0.69 | 0.69 | 0.53    |
|                 | 8                                     | 0.65 | 0.65 | 0.65 | 0.66 | 0.51    |
|                 | 10                                    | 0.63 | 0.63 | 0.63 | 0.64 | 0.49    |

## TECHNICAL INFORMATION

### 0.6/1 KV CABLES CURRENT CARRYING CAPACITY

C. Factors for grouping in soil Single core cables in trefoil formation Clearance between systems: 7 cm, 25 cm

| Insulation Type | Load Factor                           |      |      | 0.7  |      |      |      |      |      | 1.0     |      |
|-----------------|---------------------------------------|------|------|------|------|------|------|------|------|---------|------|
|                 | Thermal Resistivity of the soil K.m/W | 0.7  |      | 1.0  |      | 1.5  |      | 2.5  |      | 0.7-2.5 |      |
|                 | Clearance (cm)                        | 7    | 25   | 7    | 25   | 7    | 25   | 7    | 25   | 7       | 25   |
|                 | No. of systems in the trench $\rho$   |      |      |      |      |      |      |      |      |         |      |
| XLPE            | 1                                     | 0.99 | 0.99 | 1    | 1    | 1.01 | 1.01 | 1.03 | 1.03 | 0.87    | 0.87 |
|                 | 2                                     | 0.84 | 0.89 | 0.85 | 0.89 | 0.86 | 0.9  | 0.87 | 0.91 | 0.71    | 0.75 |
|                 | 3                                     | 0.74 | 0.81 | 0.75 | 0.82 | 0.76 | 0.82 | 0.76 | 0.83 | 0.61    | 0.67 |
|                 | 4                                     | 0.69 | 0.78 | 0.7  | 0.78 | 0.7  | 0.79 | 0.71 | 0.79 | 0.56    | 0.64 |
|                 | 5                                     | 0.65 | 0.74 | 0.66 | 0.75 | 0.66 | 0.75 | 0.67 | 0.76 | 0.52    | 0.6  |
|                 | 6                                     | 0.62 | 0.72 | 0.63 | 0.73 | 0.63 | 0.73 | 0.64 | 0.74 | 0.5     | 0.59 |
|                 | 8                                     | 0.58 | 0.7  | 0.59 | 0.7  | 0.59 | 0.7  | 0.59 | 0.71 | 0.46    | 0.56 |
|                 | 10                                    | 0.56 | 0.68 | 0.56 | 0.68 | 0.56 | 0.68 | 0.57 | 0.69 | 0.44    | 0.54 |
| PVC             | 1                                     | 0.99 | 0.99 | 1    | 1    | 1.01 | 1.01 | 1.01 | 1.01 | 0.87    | 0.87 |
|                 | 2                                     | 0.84 | 0.89 | 0.85 | 0.9  | 0.86 | 0.91 | 0.87 | 0.92 | 0.71    | 0.75 |
|                 | 3                                     | 0.74 | 0.82 | 0.75 | 0.82 | 0.76 | 0.83 | 0.77 | 0.84 | 0.61    | 0.67 |
|                 | 4                                     | 0.69 | 0.78 | 0.7  | 0.79 | 0.71 | 0.79 | 0.71 | 0.8  | 0.56    | 0.64 |
|                 | 5                                     | 0.65 | 0.75 | 0.66 | 0.76 | 0.66 | 0.76 | 0.67 | 0.77 | 0.52    | 0.6  |
|                 | 6                                     | 0.62 | 0.73 | 0.63 | 0.74 | 0.64 | 0.74 | 0.64 | 0.75 | 0.5     | 0.59 |
|                 | 8                                     | 0.58 | 0.7  | 0.59 | 0.71 | 0.59 | 0.71 | 0.6  | 0.72 | 0.46    | 0.56 |
|                 | 10                                    | 0.55 | 0.69 | 0.56 | 0.69 | 0.56 | 0.69 | 0.57 | 0.7  | 0.44    | 0.54 |

D. Factors for grouping in soil 3, 4 & 5 core cables laid side by side Clearance between cables: 7 cm

| Insulation Type | Load Factor                           | 0.7  |      |      |      | 1       |
|-----------------|---------------------------------------|------|------|------|------|---------|
|                 | Thermal Resistivity of the soil K.m/W | 0.7  | 1    | 1.5  | 2.5  | 0.7-2.5 |
|                 | No. of systems in the trench $\rho$   |      |      |      |      |         |
|                 |                                       |      |      |      |      |         |
| XLPE            | 1                                     | 0.99 | 1    | 1.01 | 1.02 | 0.89    |
|                 | 2                                     | 0.84 | 0.85 | 0.86 | 0.87 | 0.72    |
|                 | 3                                     | 0.74 | 0.75 | 0.77 | 0.77 | 0.62    |
|                 | 4                                     | 0.69 | 0.7  | 0.71 | 0.72 | 0.57    |
|                 | 5                                     | 0.65 | 0.66 | 0.67 | 0.67 | 0.53    |
|                 | 6                                     | 0.63 | 0.63 | 0.64 | 0.65 | 0.51    |
|                 | 8                                     | 0.59 | 0.59 | 0.6  | 0.6  | 0.47    |
|                 | 10                                    | 0.56 | 0.56 | 0.57 | 0.57 | 0.44    |
| PVC             | 1                                     | 0.94 | 1    | 1.01 | 1.02 | 0.89    |
|                 | 2                                     | 0.85 | 0.86 | 0.87 | 0.88 | 0.72    |
|                 | 3                                     | 0.75 | 0.76 | 0.77 | 0.78 | 0.62    |
|                 | 4                                     | 0.7  | 0.71 | 0.72 | 0.73 | 0.57    |
|                 | 5                                     | 0.66 | 0.67 | 0.68 | 0.68 | 0.53    |
|                 | 6                                     | 0.64 | 0.64 | 0.65 | 0.65 | 0.51    |
|                 | 8                                     | 0.59 | 0.6  | 0.61 | 0.61 | 0.47    |
|                 | 10                                    | 0.57 | 0.57 | 0.58 | 0.58 | 0.44    |

E. Factors relating to depth of laying

| DEPTH (Mtr) | FACTORS |
|-------------|---------|
| 0.5         | 1.03    |
| 0.7         | 1       |
| 1           | 0.96    |
| 1.2         | 0.93    |
| 1.5         | 0.91    |

## TECHNICAL INFORMATION

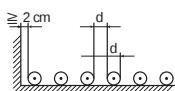
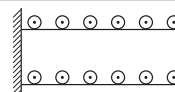
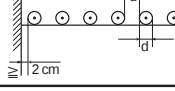
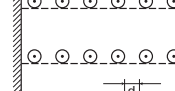
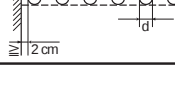
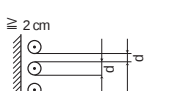
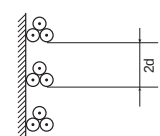
### 0.6/1 KV CABLES CURRENT CARRYING CAPACITY

#### INSTALLATION IN GROUND

A Factors for variation in ambient temperature:

| AIR TEMPERATURE |      | 10   | 15   | 20   | 25   | 30 | 35   | 40   | 45   | 50   |
|-----------------|------|------|------|------|------|----|------|------|------|------|
| INSULATION      | XLPE | 1.15 | 1.12 | 1.08 | 1.4  | 1  | 0.96 | 0.91 | 0.87 | 0.82 |
|                 | PVC  | 1.22 | 1.17 | 1.12 | 1.07 | 1  | 0.94 | 0.87 | 0.79 | 0.71 |

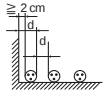
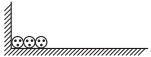
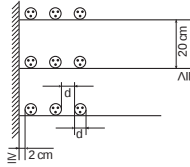
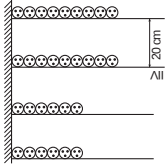
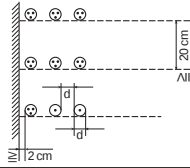
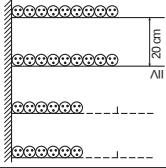
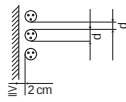
B. Factors for grouping in air. Single core cables in three phase systems.

| Arrangement of cables                                 |                   | In flat formation, clearance = cable diameter d<br>Distance from wall $\geq 2$ cm |      |      | In flat formation, clearance = 2d<br>Distance from wall $\geq 2$ cm                   |  |  |  |
|-------------------------------------------------------|-------------------|-----------------------------------------------------------------------------------|------|------|---------------------------------------------------------------------------------------|--|--|--|
| Number of systems side by side                        |                   | 1                                                                                 | 2    | 3    |                                                                                       |  |  |  |
| Laying on the ground                                  |                   | 0,92                                                                              | 0,89 | 0,88 |     |  |  |  |
| Laying on cable troughs (restricted air circulation)  | Number of troughs |                                                                                   |      |      |                                                                                       |  |  |  |
|                                                       | 1                 | 0,92                                                                              | 0,89 | 0,88 |    |  |  |  |
|                                                       | 2                 | 0,87                                                                              | 0,84 | 0,83 |    |  |  |  |
|                                                       | 3                 | 0,84                                                                              | 0,82 | 0,81 |    |  |  |  |
| Laying on cable grills (unrestricted air circulation) | Number of grills  |                                                                                   |      |      |                                                                                       |  |  |  |
|                                                       | 1                 | 1,00                                                                              | 0,97 | 0,96 |    |  |  |  |
|                                                       | 2                 | 0,97                                                                              | 0,94 | 0,93 |    |  |  |  |
|                                                       | 3                 | 0,96                                                                              | 0,93 | 0,92 |    |  |  |  |
| Number of systems above each other                    |                   | 1                                                                                 | 2    | 3    |                                                                                       |  |  |  |
| Arranged on frameworks or at walls                    |                   | 0,94                                                                              | 0,91 | 0,89 |  |  |  |  |

## TECHNICAL INFORMATION

### 0.6/1 KV CABLES FACTORS FOR CURRENT CARRYING CAPACITY

C. Factors for grouping in air. Multicore cables in three face systems.

| Arrangement of cables                                 | clearance = cable diameter d<br>Distance from wall 2 cm |      |      |      |      | Cables touching each other and in contact with the wall |                                                                                     |      |      |      |      |      |                                                                                       |
|-------------------------------------------------------|---------------------------------------------------------|------|------|------|------|---------------------------------------------------------|-------------------------------------------------------------------------------------|------|------|------|------|------|---------------------------------------------------------------------------------------|
| Number of cables side by side                         | 1                                                       | 2    | 3    | 6    | 9    |                                                         | 1                                                                                   | 2    | 2    | 6    | 9    |      |                                                                                       |
| Laying on the ground                                  |                                                         | 0,95 | 0,90 | 0,88 | 0,85 | 0,84                                                    |    | 0,90 | 0,84 | 0,80 | 0,75 | 0,73 |    |
| Number of troughs                                     |                                                         |      |      |      |      |                                                         |                                                                                     |      |      |      |      |      |                                                                                       |
| Laying on cable troughs (restricted air circulation)  | 1                                                       | 0,95 | 0,90 | 0,88 | 0,85 | 0,84                                                    |   | 0,95 | 0,84 | 0,80 | 0,75 | 0,73 |   |
|                                                       | 2                                                       | 0,90 | 0,85 | 0,83 | 0,81 | 0,80                                                    |                                                                                     | 0,95 | 0,80 | 0,76 | 0,71 | 0,69 |                                                                                       |
|                                                       | 3                                                       | 0,88 | 0,83 | 0,81 | 0,79 | 0,78                                                    |                                                                                     | 0,95 | 0,78 | 0,74 | 0,70 | 0,68 |                                                                                       |
|                                                       | 6                                                       | 0,86 | 0,81 | 0,79 | 0,77 | 0,76                                                    |                                                                                     | 0,95 | 0,76 | 0,72 | 0,68 | 0,66 |                                                                                       |
| Number of grills                                      |                                                         |      |      |      |      |                                                         |                                                                                     |      |      |      |      |      |                                                                                       |
| Laying on cable grills (unrestricted air circulation) | 1                                                       | 1,00 | 0,98 | 0,96 | 0,93 | 0,92                                                    |  | 0,95 | 0,84 | 0,80 | 0,75 | 0,73 |  |
|                                                       | 2                                                       | 1,00 | 0,95 | 0,93 | 0,90 | 0,89                                                    |                                                                                     | 0,95 | 0,80 | 0,76 | 0,71 | 0,69 |                                                                                       |
|                                                       | 3                                                       | 1,00 | 0,94 | 0,92 | 0,89 | 0,88                                                    |                                                                                     | 0,95 | 0,78 | 0,74 | 0,70 | 0,68 |                                                                                       |
|                                                       | 6                                                       | 1,00 | 0,93 | 0,90 | 0,87 | 0,86                                                    |                                                                                     | 0,95 | 0,76 | 0,72 | 0,68 | 0,66 |                                                                                       |
| Number of cables above each other                     | 1                                                       |      |      |      |      |                                                         |  | 1    | 2    | 3    | 6    | 9    |  |
| Arranged on frameworks or at walls                    |                                                         | 1,00 | 0,93 | 0,90 | 0,87 | 0,86                                                    |                                                                                     | 0,95 | 0,78 | 0,73 | 0,68 | 0,66 |                                                                                       |

## TECHNICAL INFORMATION

### MAXIMUM PULLING TENSIONS

The maximum tension must not be exceeded when pulling a cable into ducts and conduits:

A. Using a pulling eye:

$$T_m = 7.16 \times n \times A$$

$T_m$  = Maximum tension, (Kg)

$n$  = No of conductors

$A$  = Area of each conductor, sq. mm

B. Using a cable grip:

$$T_g = p \times k \times t \times (D - t)$$

$T_g$  = Maximum Tension, (Kg)

$t$  = Jacket thickness, mm

$D$  = Cable overall diameter, mm

$k$  = 0.7 Kg/sq.mm for PVC, PE & Neoprene

The tension required to pull the cable in a straight duct can be calculated as follows:

$$T_s = L \times w \times f$$

$T_s$  = Tension required to pull cable, Kg.

$L$  = Length of cable, m

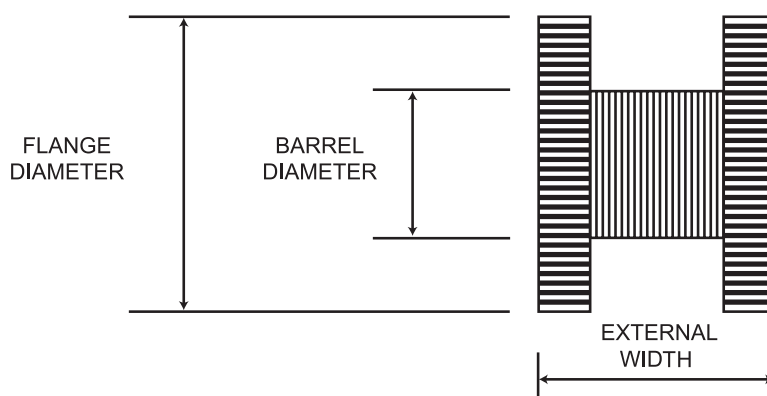
$w$  = Weight of cable, Kg/m

$f$  = Co-ef efficient of friction

| Duct Material   | Coefficient of friction |      |          |
|-----------------|-------------------------|------|----------|
|                 | Jacket Material         |      |          |
|                 | PE                      | PVC  | Neoprene |
| Asbestos Cement | 0.56                    | 0.56 | 0.68     |
| Rigid PVC       | 0.34                    | 0.52 | 0.53     |
| Metal           | 0.36                    | 0.55 | 0.6      |

## TECHNICAL INFORMATION

### M.E.S.C. WOODEN REEL DETAILS



#### DIMENSIONS AND WEIGHTS

| REEL SIZE | FLANGE DIAMETER (mm) | BARREL DIAMETER (mm) | EXTERNAL WIDTH (mm) | EMPTY REEL WT (APPROX.) (KG.) |
|-----------|----------------------|----------------------|---------------------|-------------------------------|
| D - 5     | 500                  | 250                  | 372                 | 9                             |
| D - 6     | 630                  | 315                  | 472                 | 14                            |
| D - 7     | 710                  | 355                  | 522                 | 18                            |
| D - 8     | 800                  | 400                  | 572                 | 25                            |
| D - 9     | 900                  | 450                  | 632                 | 32                            |
| D - 10    | 1000                 | 500                  | 726                 | 40                            |
| D - 11    | 1100                 | 560                  | 806                 | 60                            |
| D - 12    | 1250                 | 630                  | 896                 | 85                            |
| D - 14    | 1400                 | 710                  | 996                 | 105                           |
| D - 16    | 1600                 | 800                  | 1120                | 175                           |

#### GUIDELINES FOR SELECTION OF REELS

| Reel Size | Cable length = 1000 Meter<br>Cable ~ Range mm |    |      | Cable Length = 500 Meter<br>Cable ~ Range mm |    |      |
|-----------|-----------------------------------------------|----|------|----------------------------------------------|----|------|
|           | Up to                                         |    |      | Up to                                        |    |      |
| D-5       |                                               |    | 4.4  |                                              |    | 6.6  |
| D-6       | 4.5                                           | to | 7.4  | 6.7                                          | to | 10.5 |
| D-7       | 7.5                                           | to | 9.2  | 10.6                                         | to | 13   |
| D-8       | 9.3                                           | to | 11.3 | 13.1                                         | to | 15.8 |
| D-9       | 11.4                                          | to | 13.6 | 15.9                                         | to | 19.4 |
| D-10      | 13.7                                          | to | 16   | 19.5                                         | to | 23.4 |
| D-11      | 16.1                                          | to | 19.3 | 23.5                                         | to | 27.2 |
| D-12      | 19.4                                          | to | 24   | 27.3                                         | to | 33   |
| D-14      | 24.1                                          | to | 28.6 | 33.1                                         | to | 39.6 |
| D-16      | 28.7                                          | to | 35.4 | 39.6                                         | to | 47   |





#### Office:

Flat 101, Al Hawaii Tower,  
Sheikh Zayed Road, Dubai  
PO Box: 73750 - UAE  
Tel : +971 4 3437885  
Fax: +971 4 3437488  
[dubai.sales@mesccables.com](mailto:dubai.sales@mesccables.com)

#### Factory:

Plots N63-71 Rakia Al Ghayl  
Ras Al Khaimah - UAE  
PO Box: 12566  
Tel: +971 7 2589090  
Fax: +971 7 2589191  
[mesc.rak@mesccables.com](mailto:mesc.rak@mesccables.com)