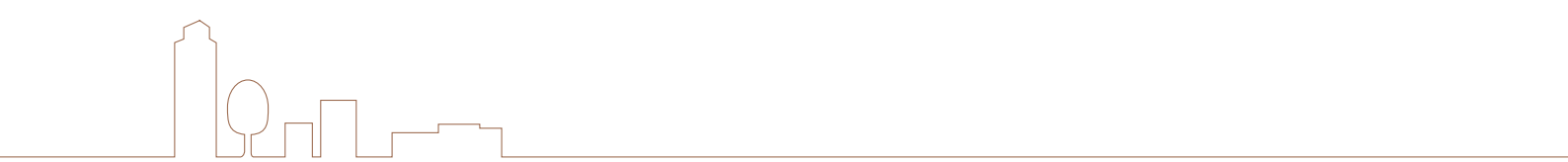
UNIVERSAL CABLE (M) BERHAD
(Co. No. : 7042-D)

THE UNIVERSAL CHOICE

# OFFSHORE, MARINE AND SHIPBOARD CABLE

*A Member of* **SARAWAK CABLE BERHAD GROUP**



# INTRODUCTION

## History

Universal Cable (M) Berhad was established in March 1967. Phenomenal growth and success over the years has enabled Universal Cable to achieve the formidable status as the largest cable manufacturer in Malaysia and most trusted cable and wire manufacturer in the region.

## Universal Cable Today

Universal Cable today has a broad manufacturing portfolio of cable and wire products, which includes advanced power and control cables, instrumentation cables, aluminium conductors and cables, cables for the oil & gas industry and various types of specialty cables such as welding cables and automotive cables.

# OPERATION

Universal Cable has 2 manufacturing plants, Pandan and Plentong all located in Johor, Malaysia.

## Pandan

Our Pandan plant commenced its manufacturing operation in the 1970s. Since then, Pandan has broaden its range of products to include:

- Low voltage power and control cables
- Offshore, marine and shipboard cables
- Fire resistant and flame retardant cables
- Instrumentation cables and
- Specialty cables
- Aluminium conductors
- Aluminium power cables
- Aerial bundle cables (ABC)

## Plentong

The Plentong plant was set up in the early 90s and started producing Medium Voltage and High Voltage cables in 1995. Universal Cable Plentong has the ability and technology to manufacture Medium Voltage and High Voltage cables up to 275kV. Universal Cable is the first and only cable manufacturer in Malaysia with the ability and technology to manufacture up to 275kV power cables.

With this capability, Universal Cable produces products that are highly demanded by the electricity authorities locally and internationally.

# QUALITY ASSURANCE & CERTIFICATIONS

Centro Elettrotecnico Sperimentale Italiano,Italy

KEMA Netherlands

Over the years, Universal Cable has been bestowed with many certifications and awards from the most stringent local and international accreditation authorities.

Universal Cable has spared no efforts in maintaining and constantly upgrading its sophisticated product Research & Development capabilities. We have made remarkable headway through our constant investments in new state-of-the-art machinery that incorporate the latest technologies. In addition, our testing equipments represent the most stringent standards applied in the manufacture of our extensive range of cables.

Universal Cable's unrelenting pursuit for impeccable product quality and functional enhancements, and improvements strongly reaffirms our total dedication and devotion to our product Research & Development strengths and achievements.

Our stringent emphasis on total quality control and exhaustive testing at all stages of cable production further enhance the demanding standards that are exacted on our cable products. Universal Cable products are renowned for maximum operating efficiency under the most severe operating environments.

Our extensive and in-depth commitment to Total Customer Satisfaction, gained us both local and international recognitions and certifications. The quality management system MS ISO 9001:2015 certification and the type tests by KEMA from Netherlands, CESI from Italy, ABS from the United States, LR from United Kingdom, PSB from Singapore and SIRIM from Malaysia are testaments to our total commitment in product quality and manufacturing excellence. The ISO 45001:2018 (OHSAS 18001:2007) Management Systems and our pursuance of ISO 14001:2015 in Environmental Management System demonstrates our pledge towards a safe & healthy workplace, practices and legislative compliances.

# AWARDS & ACCOLADES

In 2005 & 2006, the Malaysia International Trade and industry (MITI) recognized our efforts by way of Export Excellence Merit status. In 2007, we were honored with the prestigious Export Excellence Award (Merchandise) from the MITI.

We are the first cable manufacturer in Malaysia to receive both the prestigious Business Superbrands Malaysia in 2006 and the coveted BrandLaureate Award for 7 consecutive terms of 2006/2007, 2007/2008, 2008/2009, 2009/2010, 2010/2011, 2011/2012 & 2012/2013 for the Best Brands in Asiz Pacific. Pioneering the industry, our commitment towards manufacturing excellence has also been recognized by receiving the coveted Frost & Sullivan Malaysia Manufacturing Excellence Award (Gold-Engineering Category) in 2008. In 2009, we were awarded the Brand Excellence Award (certificate) by MITI.

Our vision is to be the dominant world-class cable manufacturer in ASEAN. Our mission is to manufacture cables for electricity supply and information & communication technology to meet the needs of the public. We uphold our universal values to ensure total customer satisfaction, strive for continuous growth and create value for our shareholders.

# INTERNATIONAL MARKET

**Our remarkable achievement in transcending local market boundaries into the international arena is witnessed by the global partners with which Universal Cable have developed strong affiliations.**

**Our list of international destinations grows from Australia, Fiji Islands, New Zealand, Brunei, China, India, Indonesia, Japan, Maldives, Nepal, Pakistan, South Korea, Sri Lamka, Philippines, Singapore, Vietnam, Cambodia, Oman, Jordan, Sudan, UAE, Djibouti, Yemen, Bahrain, Saudi Arabia, Mauritius, South Africa, Myanmar, Papua New Guinea, Hong Kong, Brazil, Germany, Bangladesh, which demonstrates the wide reach of our cable products.**

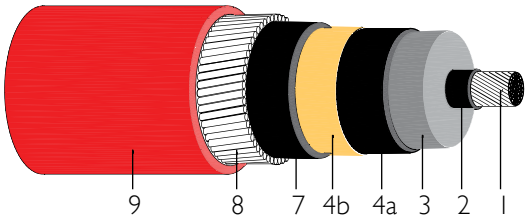
**Today, the brand name Universal Cable has become synonymous with product excellence and gained worldwide recognition for its premium quality.**

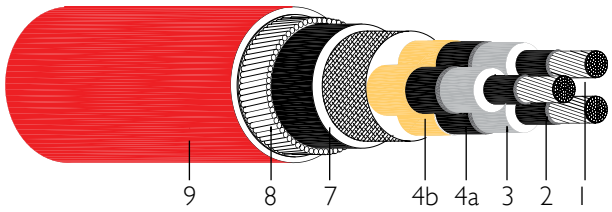
# Offshore, Marine And Shipboard Cable

## CONTENTS

# CROSS-LINKED POLYETHYLENE INSULATED ARMOURED PVC SHEATHED FLAME RETARDANT CABLE

## TYPE H1 : CU/XLPE/SCT/PVC/AWA/PVC CABLE
## CU/XLPE/SCT/PVC/SWA/PVC CABLE 6/10 (12 ) kV




**DESCRIPTION**

Single core and three-core with copper conductor, XLPE insulated, copper tape screened, flame retardant PVC bedding , galvanised steel wire armoured and flame retardant PVC outer sheath. Cables are rated at 6/10 (12) kV.

**CONSTRUCTION**

1 **Conductor**
Plain circular compacted stranded copper conductor conforming to IEC 60228 class 2.

2 **Conductor screen**
Extruded layer of semi conductive compound.

3 **Insulation**
XLPE (cross-linked polyethylene)

4 **Insulation screen**
a. **Non-metallic part** - Extruded layer of semi conductive compound.
b. **Metallic part** - Copper tape screen ( SCT ).

5 **Colours for core identification**
Single core - natural
Three cores - red, yellow and blue tapes shall be applied between non metallic and metallic part of insulation screen.

6 **Cabling**
Three insulated screened cores are laid up together and filled with non-hygroscopic material compatible with the insulation.

7 **Bedding**
Flame retardant PVC, colour black.

8 **Armour**
Single core - aluminium wires shall be applied over the PVC bedding- ( AWA ).
Multi-core - galvanized steel wires shall be applied over the PVC bedding- ( SWA ).

9 **Outer sheath**
Flame retardant PVC, colour red.

**SPECIFICATIONS:**

IEC 60502
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 17 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

**Alternative bedding / outer sheath material :**

Flame Retardant Low Smoke Zero Halogen (LSOH) compound

## TYPE H1 : CU/XLPE/SCT/PVC/AWA/PVC CABLE - SINGLE CORE — 6/10 (12) kV

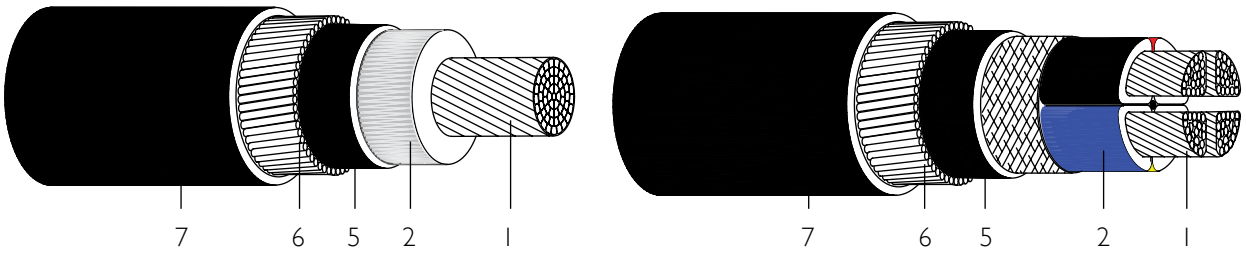
| Nominal cross-sectional area of conductor | Nominal diameter of conductor | Nominal thickness of XLPE insulation | Nominal thickness of PVC bedding | Approx. bedding diameter | Nominal diameter of aluminium wire | Nominal thickness of PVC sheath | Approx. overall diameter of cable | Approx. weight of cable | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 50 | 8.1 | 3.4 | 1.2 | 20.1 | 1.6 | 1.8 | 27.3 | 1260 | 196 | 0.87 |
| 70 | 9.7 | 3.4 | 1.2 | 21.8 | 1.6 | 1.9 | 29.1 | 1540 | 242 | 0.62 |
| 95 | 11.5 | 3.4 | 1.2 | 23.5 | 1.6 | 2.0 | 31.1 | 1870 | 293 | 0.47 |
| 120 | 12.9 | 3.4 | 1.2 | 25.0 | 2.0 | 2.0 | 33.3 | 2240 | 339 | 0.39 |
| 150 | 14.3 | 3.4 | 1.2 | 26.4 | 2.0 | 2.1 | 34.9 | 2580 | 389 | 0.33 |
| 185 | 16.1 | 3.4 | 1.2 | 28.1 | 2.0 | 2.1 | 36.7 | 3000 | 444 | 0.28 |
| 240 | 18.4 | 3.4 | 1.2 | 30.5 | 2.0 | 2.2 | 39.2 | 3680 | 522 | 0.24 |
| 300 | 20.6 | 3.4 | 1.2 | 32.7 | 2.0 | 2.3 | 41.6 | 4380 | 601 | 0.21 |
| 400 | 23.3 | 3.4 | 1.3 | 35.6 | 2.5 | 2.4 | 45.7 | 5480 | 719 | 0.195 |
| 500 | 26.2 | 3.4 | 1.3 | 38.4 | 2.5 | 2.5 | 48.8 | 6590 | 827 | 0.180 |
| 630 | 29.8 | 3.4 | 1.4 | 42.8 | 2.5 | 2.6 | 53.4 | 8200 | 955 | 0.170 |
| 800 | 33.7 | 3.4 | 1.5 | 46.9 | 2.5 | 2.8 | 57.9 | 10130 | 1109 | 0.165 |
| 1000 | 41.6 | 3.4 | 1.5 | 54.8 | 2.5 | 2.9 | 66.0 | 12560 | 1275 | 0.155 |

## TYPE H1 : CU/XLPE/SCT/PVC/SWA/PVC CABLE - THREE CORES — 6/10 (12) kV

| Nominal cross-sectional area of conductor | Nominal diameter of conductor | Nominal thickness of XLPE insulation | Nominal thickness of PVC bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of PVC sheath | Approx. overall diameter of cable | Approx. weight of cable | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| mm² | mm | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 50 | 8.1 | 3.4 | 1.4 | 40.6 | 2.5 | 2.7 | 51.7 | 5310 | 137 | 0.87 |
| 70 | 9.7 | 3.4 | 1.5 | 44.3 | 2.5 | 2.8 | 55.6 | 6330 | 169 | 0.60 |
| 95 | 11.5 | 3.4 | 1.5 | 48.0 | 2.5 | 2.9 | 59.5 | 7500 | 205 | 0.45 |
| 120 | 12.9 | 3.4 | 1.6 | 51.4 | 2.5 | 3.0 | 63.1 | 8610 | 237 | 0.37 |
| 150 | 14.3 | 3.4 | 1.7 | 54.6 | 2.5 | 3.1 | 66.5 | 9800 | 272 | 0.30 |
| 185 | 16.1 | 3.4 | 1.7 | 58.3 | 2.5 | 3.3 | 70.6 | 11330 | 311 | 0.26 |
| 240 | 18.4 | 3.4 | 1.8 | 63.6 | 3.15 | 3.5 | 78.1 | 14620 | 365 | 0.21 |
| 300 | 20.6 | 3.4 | 1.9 | 68.6 | 3.15 | 3.6 | 83.3 | 17120 | 421 | 0.185 |
| 400 | 23.3 | 3.4 | 2.0 | 74.6 | 3.15 | 3.9 | 89.9 | 20440 | 503 | 0.165 |

# CROSS-LINKED POLYETHYLENE INSULATED ARMOURED PVC SHEATHED FLAME RETARDANT CABLE

## TYPE P2 : CU/XLPE/PVC/AWA/PVC CABLE
## CU/XLPE/PVC/SWA/PVC CABLE 0.6/1 (1.2) kV




**DESCRIPTION**

Single-core and multi-core cables with copper conductor, XLPE insulated, flame retardant PVC bedding, galvanised steel wire armouring and flame retardant PVC sheathed. Cables are rated at 0.6/1 (1.2) kV.

**CONSTRUCTION**

1 **Conductor**
Plain circular compacted or shaped stranded copper conductor conforming to IEC 60228 class 2.

2 **Insulation**
XLPE ( cross-linked polyethylene )

3 **Colours for core identification**
Single core - natural
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black
Five core & above - white core with numbering
Earth core - green/yellow

4 **Cabling**
Two, three, four, five or more insulated cores are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

5 **Bedding**
Flame retardant PVC compound, colour black.

6 **Armour**
Single Core -- Aluminium wire shall be applied over the bedding- ( AWA ).
Multi Cores -- Galvanised steel wire shall be applied over the bedding- ( SWA ).

7 **Sheath**
Flame retardant PVC compound, colour black.

**SPECIFICATIONS:**

IEC 60502
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 17 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

**Alternative bedding / outer sheath material :**

Flame Retardant Low Smoke Zero Halogen (LSOH) compound

## TYPE P2 : CU/XLPE/PVC/AWA/PVC CABLE - SINGLE CORE — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of aluminium wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 16 | c.c. | 0.7 | 1.0 | 8.2 | 0.9 | 1.8 | 13.6 | 350 | 96 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 9.8 | 0.9 | 1.8 | 15.2 | 480 | 127 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 11.0 | 0.9 | 1.8 | 16.4 | 590 | 157 | 1.15 |
| 50 | c.c. | 1.0 | 1.0 | 12.4 | 1.25 | 1.8 | 18.5 | 780 | 196 | 0.87 |
| 70 | c.c. | 1.1 | 1.0 | 14.3 | 1.25 | 1.8 | 20.4 | 1030 | 242 | 0.62 |
| 95 | c.c. | 1.1 | 1.0 | 16.0 | 1.25 | 1.8 | 22.1 | 1310 | 293 | 0.47 |
| 120 | c.c. | 1.2 | 1.0 | 17.8 | 1.6 | 1.8 | 25.1 | 1650 | 339 | 0.39 |
| 150 | c.c. | 1.4 | 1.0 | 19.6 | 1.6 | 1.8 | 26.9 | 2010 | 389 | 0.33 |
| 185 | c.c. | 1.6 | 1.0 | 21.8 | 1.6 | 1.8 | 29.1 | 2370 | 444 | 0.28 |
| 240 | c.c. | 1.7 | 1.0 | 24.4 | 1.6 | 1.9 | 31.9 | 3000 | 522 | 0.24 |
| 300 | c.c. | 1.8 | 1.0 | 26.9 | 1.6 | 1.9 | 34.4 | 3650 | 601 | 0.21 |
| 400 | c.c. | 2.0 | 1.2 | 30.5 | 2.0 | 2.1 | 39.2 | 4720 | 719 | 0.195 |
| 500 | c.c. | 2.2 | 1.2 | 33.9 | 2.0 | 2.2 | 42.8 | 5830 | 827 | 0.180 |
| 630 | c.c. | 2.4 | 1.2 | 38.0 | 2.0 | 2.3 | 47.1 | 7320 | 955 | 0.170 |
| 800 | c.c. | 2.6 | 1.4 | 42.5 | 2.5 | 2.5 | 53.0 | 9410 | 1109 | 0.165 |
| 1000 | r.m. | 2.8 | 1.4 | 50.0 | 2.5 | 2.7 | 60.9 | 11790 | 1275 | 0.155 |

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - TWO CORES — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 8.1 | 0.9 | 1.8 | 13.5 | 340 | 20 | 31 |
| 2.5 | r.m. | 0.7 | 1.0 | 8.9 | 0.9 | 1.8 | 14.3 | 390 | 26 | 19 |
| 4 | r.m. | 0.7 | 1.0 | 10.0 | 0.9 | 1.8 | 15.4 | 460 | 34 | 12 |
| 6 | r.m. | 0.7 | 1.0 | 11.1 | 0.9 | 1.8 | 16.5 | 540 | 44 | 7.9 |
| 10 | r.m. | 0.7 | 1.0 | 13.0 | 1.25 | 1.8 | 19.1 | 800 | 61 | 4.7 |
| 16 | c.c. | 0.7 | 1.0 | 14.5 | 1.25 | 1.8 | 20.6 | 980 | 82 | 2.9 |
| 25 | c.c. | 0.9 | 1.0 | 17.8 | 1.6 | 1.8 | 24.6 | 1460 | 108 | 1.9 |
| 35 | c.c. | 0.9 | 1.0 | 20.1 | 1.6 | 1.8 | 26.9 | 1780 | 133 | 1.35 |
| 50 | s.m. | 1.0 | 1.0 | 19.3 | 1.6 | 1.8 | 26.1 | 1910 | 167 | 1.00 |
| 70 | s.m. | 1.1 | 1.0 | 22.3 | 1.6 | 2.0 | 29.5 | 2480 | 206 | 0.69 |
| 95 | s.m. | 1.1 | 1.2 | 25.4 | 2.0 | 2.1 | 33.6 | 3410 | 249 | 0.52 |
| 120 | s.m. | 1.2 | 1.2 | 28.1 | 2.0 | 2.2 | 36.5 | 4050 | 288 | 0.42 |
| 150 | s.m. | 1.4 | 1.2 | 31.1 | 2.0 | 2.3 | 39.7 | 4890 | 331 | 0.35 |
| 185 | s.m. | 1.6 | 1.4 | 35.0 | 2.5 | 2.5 | 46.0 | 6180 | 377 | 0.29 |
| 240 | s.m. | 1.7 | 1.4 | 39.1 | 2.5 | 2.7 | 50.5 | 7640 | 444 | 0.24 |
| 300 | s.m. | 1.8 | 1.6 | 43.3 | 2.5 | 2.8 | 54.9 | 9200 | 511 | 0.21 |
| 400 | s.m. | 2.0 | 1.6 | 48.4 | 2.5 | 3.1 | 60.6 | 11350 | 611 | 0.19 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded, s.m. - shaped stranded

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - THREE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 8.5 | 0.9 | 1.8 | 13.9 | 370 | 16 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 9.4 | 0.9 | 1.8 | 14.8 | 430 | 21 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 10.6 | 0.9 | 1.8 | 16.0 | 520 | 28 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 11.8 | 0.9 | 1.8 | 17.2 | 620 | 36 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 13.8 | 1.25 | 1.8 | 19.9 | 930 | 50 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 15.4 | 1.25 | 1.8 | 21.5 | 1170 | 67 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 19.0 | 1.6 | 1.8 | 25.8 | 1760 | 89 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 21.5 | 1.6 | 1.8 | 28.3 | 2170 | 110 | 1.15 |
| 50 | s.m. | 1.0 | 1.0 | 22.5 | 1.6 | 1.9 | 29.5 | 2560 | 137 | 0.87 |
| 70 | s.m. | 1.1 | 1.2 | 26.5 | 2.0 | 2.0 | 34.5 | 3630 | 169 | 0.60 |
| 95 | s.m. | 1.1 | 1.2 | 29.8 | 2.0 | 2.2 | 38.2 | 4620 | 205 | 0.45 |
| 120 | s.m. | 1.2 | 1.2 | 33.0 | 2.0 | 2.3 | 41.6 | 5600 | 237 | 0.37 |
| 150 | s.m. | 1.4 | 1.4 | 37.0 | 2.5 | 2.5 | 48.0 | 7260 | 272 | 0.30 |
| 185 | s.m. | 1.6 | 1.4 | 41.2 | 2.5 | 2.6 | 52.4 | 8490 | 311 | 0.26 |
| 240 | s.m. | 1.7 | 1.6 | 46.6 | 2.5 | 2.8 | 58.2 | 10680 | 365 | 0.21 |
| 300 | s.m. | 1.8 | 1.6 | 51.2 | 2.5 | 3.0 | 63.2 | 12860 | 421 | 0.185 |
| 400 | s.m. | 2.0 | 1.6 | 57.3 | 2.5 | 3.2 | 69.7 | 15930 | 503 | 0.165 |

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - FOUR CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 9.3 | 0.9 | 1.8 | 14.7 | 420 | 16 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 10.3 | 0.9 | 1.8 | 15.7 | 490 | 21 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 11.6 | 0.9 | 1.8 | 17.0 | 600 | 28 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 13.0 | 1.25 | 1.8 | 19.1 | 840 | 36 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 1100 | 50 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 17.0 | 1.6 | 1.8 | 23.8 | 1540 | 67 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 21.0 | 1.6 | 1.8 | 27.8 | 2120 | 89 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 23.8 | 1.6 | 1.9 | 30.8 | 2660 | 110 | 1.15 |
| 50 | s.m. | 1.0 | 1.0 | 25.5 | 1.6 | 2.0 | 32.7 | 3230 | 137 | 0.87 |
| 70 | s.m. | 1.1 | 1.2 | 30.0 | 2.0 | 2.2 | 38.4 | 4600 | 169 | 0.60 |
| 95 | s.m. | 1.1 | 1.2 | 33.9 | 2.0 | 2.3 | 42.5 | 5870 | 205 | 0.45 |
| 120 | s.m. | 1.2 | 1.4 | 38.0 | 2.5 | 2.5 | 49.0 | 7620 | 237 | 0.37 |
| 150 | s.m. | 1.4 | 1.4 | 42.1 | 2.5 | 2.6 | 53.3 | 9200 | 272 | 0.30 |
| 185 | s.m. | 1.6 | 1.4 | 46.9 | 2.5 | 2.8 | 58.5 | 10900 | 311 | 0.26 |
| 240 | s.m. | 1.7 | 1.6 | 53.0 | 2.5 | 3.0 | 65.0 | 13720 | 365 | 0.21 |
| 300 | s.m. | 1.8 | 1.6 | 58.5 | 2.5 | 3.2 | 70.9 | 16610 | 421 | 0.185 |
| 400 | s.m. | 2.0 | 1.8 | 65.9 | 3.15 | 3.5 | 80.4 | 21690 | 503 | 0.165 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded, s.m. - shaped stranded

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - FIVE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 10.2 | 0.9 | 1.8 | 15.6 | 470 | 13 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 11.3 | 0.9 | 1.8 | 16.7 | 560 | 18 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 12.8 | 1.25 | 1.8 | 18.9 | 800 | 23 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 14.3 | 1.25 | 1.8 | 20.4 | 960 | 30 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 16.8 | 1.25 | 1.8 | 22.9 | 1280 | 42 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 18.8 | 1.6 | 1.8 | 25.6 | 1800 | 56 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 23.2 | 1.6 | 1.8 | 30.0 | 2500 | 74 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 26.4 | 1.6 | 1.9 | 33.4 | 3160 | 92 | 1.15 |
| 50 | c.c. | 1.0 | 1.2 | 30.9 | 2.0 | 2.1 | 39.1 | 4340 | 115 | 0.87 |
| 70 | c.c. | 1.1 | 1.2 | 36.0 | 2.0 | 2.3 | 44.6 | 5740 | 142 | 0.60 |
| 95 | c.c. | 1.1 | 1.4 | 41.2 | 2.5 | 2.4 | 52.0 | 7830 | 171 | 0.45 |

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - MULTI-CORES ( 1.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 1.5 | r.m. | 0.7 | 1.0 | 11.1 | 0.9 | 1.8 | 16.5 | 520 | 13 |
| 7 | 1.5 | r.m. | 0.7 | 1.0 | 11.1 | 0.9 | 1.8 | 16.5 | 540 | 12 |
| 8 | 1.5 | r.m. | 0.7 | 1.0 | 12.0 | 1.25 | 1.8 | 18.1 | 690 | 12 |
| 9 | 1.5 | r.m. | 0.7 | 1.0 | 12.9 | 1.25 | 1.8 | 19.0 | 750 | 11 |
| 10 | 1.5 | r.m. | 0.7 | 1.0 | 14.1 | 1.25 | 1.8 | 20.2 | 810 | 11 |
| 11 | 1.5 | r.m. | 0.7 | 1.0 | 14.1 | 1.25 | 1.8 | 20.2 | 830 | 10 |
| 12 | 1.5 | r.m. | 0.7 | 1.0 | 14.5 | 1.25 | 1.8 | 20.6 | 870 | 10 |
| 13 | 1.5 | r.m. | 0.7 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 920 | 10 |
| 14 | 1.5 | r.m. | 0.7 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 940 | 10 |
| 15 | 1.5 | r.m. | 0.7 | 1.0 | 16.2 | 1.25 | 1.8 | 22.3 | 1000 | 9 |
| 16 | 1.5 | r.m. | 0.7 | 1.0 | 16.2 | 1.25 | 1.8 | 22.3 | 1020 | 9 |
| 17 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 1.25 | 1.8 | 23.2 | 1070 | 9 |
| 18 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 1.25 | 1.8 | 23.2 | 1090 | 9 |
| 19 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 1.25 | 1.8 | 23.2 | 1110 | 9 |
| 20 | 1.5 | r.m. | 0.7 | 1.0 | 18.0 | 1.6 | 1.8 | 24.8 | 1310 | 8 |
| 21 | 1.5 | r.m. | 0.7 | 1.0 | 18.0 | 1.6 | 1.8 | 24.8 | 1330 | 8 |
| 24 | 1.5 | r.m. | 0.7 | 1.0 | 20.0 | 1.6 | 1.8 | 26.8 | 1480 | 8 |
| 27 | 1.5 | r.m. | 0.7 | 1.0 | 20.5 | 1.6 | 1.8 | 27.3 | 1560 | 8 |
| 30 | 1.5 | r.m. | 0.7 | 1.0 | 21.3 | 1.6 | 1.8 | 28.1 | 1660 | 7 |
| 37 | 1.5 | r.m. | 0.7 | 1.0 | 23.0 | 1.6 | 1.8 | 29.8 | 1870 | 7 |
| 48 | 1.5 | r.m. | 0.7 | 1.0 | 26.5 | 1.6 | 1.9 | 33.5 | 2270 | 6 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - MULTI-CORES ( 2.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 2.5 | r.m. | 0.7 | 1.0 | 12.3 | 1.25 | 1.8 | 18.4 | 730 | 17 |
| 7 | 2.5 | r.m. | 0.7 | 1.0 | 12.3 | 1.25 | 1.8 | 18.4 | 750 | 16 |
| 8 | 2.5 | r.m. | 0.7 | 1.0 | 13.4 | 1.25 | 1.8 | 19.5 | 830 | 15 |
| 9 | 2.5 | r.m. | 0.7 | 1.0 | 14.4 | 1.25 | 1.8 | 20.5 | 900 | 14 |
| 10 | 2.5 | r.m. | 0.7 | 1.0 | 15.7 | 1.25 | 1.8 | 21.8 | 970 | 14 |
| 11 | 2.5 | r.m. | 0.7 | 1.0 | 15.7 | 1.25 | 1.8 | 21.8 | 1000 | 13 |
| 12 | 2.5 | r.m. | 0.7 | 1.0 | 16.3 | 1.25 | 1.8 | 22.4 | 1060 | 13 |
| 13 | 2.5 | r.m. | 0.7 | 1.0 | 17.2 | 1.25 | 1.8 | 23.3 | 1120 | 13 |
| 14 | 2.5 | r.m. | 0.7 | 1.0 | 17.2 | 1.25 | 1.8 | 23.3 | 1150 | 12 |
| 15 | 2.5 | r.m. | 0.7 | 1.0 | 18.1 | 1.6 | 1.8 | 24.9 | 1380 | 12 |
| 16 | 2.5 | r.m. | 0.7 | 1.0 | 18.1 | 1.6 | 1.8 | 24.9 | 1410 | 12 |
| 17 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 1.6 | 1.8 | 25.9 | 1470 | 12 |
| 18 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 1.6 | 1.8 | 25.9 | 1500 | 11 |
| 19 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 1.6 | 1.8 | 25.9 | 1530 | 11 |
| 20 | 2.5 | r.m. | 0.7 | 1.0 | 20.2 | 1.6 | 1.8 | 27.0 | 1610 | 11 |
| 21 | 2.5 | r.m. | 0.7 | 1.0 | 20.2 | 1.6 | 1.8 | 27.0 | 1640 | 11 |
| 24 | 2.5 | r.m. | 0.7 | 1.0 | 22.6 | 1.6 | 1.8 | 29.4 | 1840 | 10 |
| 27 | 2.5 | r.m. | 0.7 | 1.0 | 23.1 | 1.6 | 1.8 | 29.9 | 1950 | 10 |
| 30 | 2.5 | r.m. | 0.7 | 1.0 | 24.0 | 1.6 | 1.9 | 31.0 | 2090 | 10 |
| 37 | 2.5 | r.m. | 0.7 | 1.0 | 26.0 | 1.6 | 1.9 | 33.0 | 2390 | 9 |
| 48 | 2.5 | r.m. | 0.7 | 1.2 | 30.4 | 2.0 | 2.1 | 38.6 | 3260 | 8 |

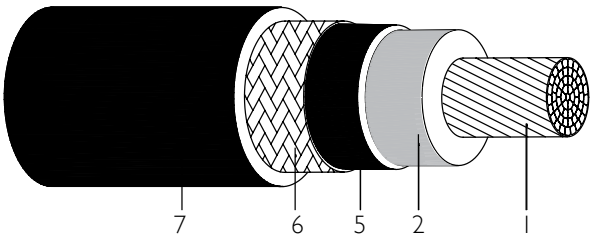
## TYPE P2 : CU/XLPE/PVC/SWA/PVC CABLE - MULTI-CORES ( 4 mm² ) 0.6/1 (1.2) kV

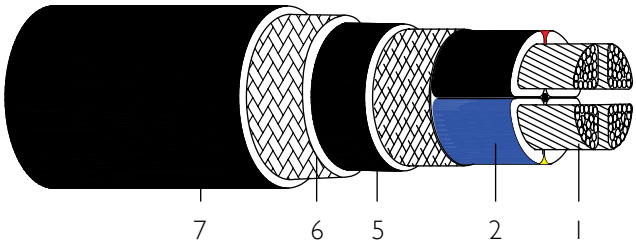
| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 4 | r.m. | 0.7 | 1.0 | 14.0 | 1.25 | 1.8 | 20.1 | 900 | 22 |
| 7 | 4 | r.m. | 0.7 | 1.0 | 14.0 | 1.25 | 1.8 | 20.1 | 930 | 21 |
| 8 | 4 | r.m. | 0.7 | 1.0 | 15.2 | 1.25 | 1.8 | 21.3 | 1040 | 20 |
| 9 | 4 | r.m. | 0.7 | 1.0 | 18.9 | 1.25 | 1.8 | 22.5 | 1140 | 19 |
| 10 | 4 | r.m. | 0.7 | 1.0 | 17.9 | 1.6 | 1.8 | 24.7 | 1370 | 19 |
| 11 | 4 | r.m. | 0.7 | 1.0 | 17.9 | 1.6 | 1.8 | 24.7 | 1420 | 18 |
| 12 | 4 | r.m. | 0.7 | 1.0 | 18.5 | 1.6 | 1.8 | 25.3 | 1490 | 17 |
| 13 | 4 | r.m. | 0.7 | 1.0 | 19.5 | 1.6 | 1.8 | 26.3 | 1580 | 17 |
| 14 | 4 | r.m. | 0.7 | 1.0 | 19.5 | 1.6 | 1.8 | 26.3 | 1630 | 17 |
| 15 | 4 | r.m. | 0.7 | 1.0 | 20.7 | 1.6 | 1.8 | 27.5 | 1730 | 16 |
| 16 | 4 | r.m. | 0.7 | 1.0 | 20.7 | 1.6 | 1.8 | 27.5 | 1780 | 16 |
| 17 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 1.6 | 1.8 | 28.7 | 1870 | 16 |
| 18 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 1.6 | 1.8 | 28.7 | 1920 | 15 |
| 19 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 1.6 | 1.8 | 28.7 | 1960 | 15 |
| 20 | 4 | r.m. | 0.7 | 1.0 | 23.1 | 1.6 | 1.8 | 29.9 | 2090 | 15 |
| 21 | 4 | r.m. | 0.7 | 1.0 | 23.1 | 1.6 | 1.8 | 29.9 | 2130 | 14 |
| 24 | 4 | r.m. | 0.7 | 1.0 | 25.8 | 1.6 | 1.9 | 32.8 | 2380 | 14 |
| 27 | 4 | r.m. | 0.7 | 1.0 | 26.4 | 1.6 | 1.9 | 33.4 | 2550 | 13 |
| 30 | 4 | r.m. | 0.7 | 1.0 | 27.5 | 1.6 | 2.0 | 34.7 | 2750 | 13 |
| 37 | 4 | r.m. | 0.7 | 1.2 | 30.3 | 2.0 | 2.1 | 38.5 | 3530 | 12 |
| 48 | 4 | r.m. | 0.7 | 1.2 | 34.8 | 2.0 | 2.2 | 43.2 | 4300 | 11 |

Note : r.m. - circular stranded

# CROSS-LINKED POLYETHYLENE INSULATED BRAIDED PVC SHEATHED FLAME RETARDANT CABLE

## TYPE P3 : CU/XLPE/PVC/TCWB/PVC CABLE
## CU/XLPE/PVC/SWB/PVC CABLE 0.6/1 (1.2) kV




**DESCRIPTION**

Single-core and multi-core cables with copper conductor, XLPE insulated, flame retardant PVC bedding, galvanised steel wire braiding and flame retardant PVC sheathed. Cables are rated at 0.6/1 (1.2) kV.

**CONSTRUCTION**

1 **Conductor**
Plain circular, compacted or shaped stranded copper conductor, conforming to IEC 60228 class 2.

2 **Insulation**
XLPE ( cross-linked polyethylene )

3 **Colours for core identification**
Single core - natural
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black
Five core & above - white core with numbering
Earth core - green/yellow

4 **Cabling**
Two, three, four, five or more insulated cores are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

5 **Bedding**
Flame retardant PVC compound, colour black.

6 **Armour**
Single Core -- Tinned copper wire shall be braided over the bedding- ( TCWB ).
Multi Cores -- Galvanised steel wire shall be braided over the bedding- ( SWB ).

7 **Sheath**
Flame retardant PVC compound, colour black.

**SPECIFICATIONS:**

IEC 60092, IEC 60502
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 17 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

**Alternative bedding / outer sheath material :**

Flame Retardant Low Smoke Zero Halogen (LSOH) compound

## TYPE P3 : CU/XLPE/PVC/TCWB/PVC CABLE - SINGLE CORE — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of tinned copper wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 16 | c.c. | 0.7 | 1.0 | 8.2 | 0.3 | 1.2 | 12.1 | 340 | 96 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 9.8 | 0.3 | 1.2 | 13.7 | 460 | 127 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 11.0 | 0.3 | 1.3 | 15.1 | 590 | 157 | 1.15 |
| 50 | c.c. | 1.0 | 1.0 | 12.4 | 0.3 | 1.3 | 16.5 | 740 | 196 | 0.87 |
| 70 | c.c. | 1.1 | 1.0 | 14.3 | 0.3 | 1.4 | 18.6 | 990 | 242 | 0.62 |
| 95 | c.c. | 1.1 | 1.0 | 16.0 | 0.3 | 1.5 | 20.5 | 1280 | 293 | 0.47 |
| 120 | c.c. | 1.2 | 1.0 | 17.8 | 0.3 | 1.5 | 22.3 | 1560 | 339 | 0.39 |
| 150 | c.c. | 1.4 | 1.0 | 19.6 | 0.3 | 1.6 | 24.3 | 1930 | 389 | 0.33 |
| 185 | c.c. | 1.6 | 1.0 | 21.8 | 0.3 | 1.7 | 26.7 | 2300 | 444 | 0.28 |
| 240 | c.c. | 1.7 | 1.0 | 24.4 | 0.3 | 1.8 | 29.5 | 2920 | 522 | 0.24 |
| 300 | c.c. | 1.8 | 1.0 | 26.9 | 0.3 | 1.9 | 32.2 | 3590 | 601 | 0.21 |
| 400 | c.c. | 2.0 | 1.2 | 30.5 | 0.3 | 2.0 | 36.0 | 4530 | 719 | 0.195 |
| 500 | c.c. | 2.2 | 1.2 | 33.9 | 0.3 | 2.1 | 39.6 | 5630 | 827 | 0.180 |
| 630 | c.c. | 2.4 | 1.2 | 38.0 | 0.3 | 2.3 | 44.1 | 7120 | 955 | 0.170 |
| 800 | c.c. | 2.6 | 1.4 | 42.5 | 0.3 | 2.5 | 49.0 | 9020 | 1109 | 0.165 |
| 1000 | r.m. | 2.8 | 1.4 | 50.0 | 0.3 | 2.6 | 56.7 | 11330 | 1275 | 0.155 |

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - TWO CORES — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 8.1 | 0.3 | 1.2 | 12.0 | 210 | 20 | 31 |
| 2.5 | r.m. | 0.7 | 1.0 | 8.9 | 0.3 | 1.2 | 12.8 | 250 | 26 | 19 |
| 4 | r.m. | 0.7 | 1.0 | 10.0 | 0.3 | 1.2 | 13.9 | 310 | 34 | 12 |
| 6 | r.m. | 0.7 | 1.0 | 11.1 | 0.3 | 1.3 | 15.2 | 380 | 44 | 7.9 |
| 10 | r.m. | 0.7 | 1.0 | 13.0 | 0.3 | 1.3 | 17.1 | 510 | 61 | 4.7 |
| 16 | c.c. | 0.7 | 1.0 | 14.5 | 0.3 | 1.4 | 18.8 | 670 | 82 | 2.9 |
| 25 | c.c. | 0.9 | 1.0 | 17.8 | 0.3 | 1.5 | 22.3 | 960 | 108 | 1.9 |
| 35 | c.c. | 0.9 | 1.0 | 20.1 | 0.3 | 1.6 | 24.8 | 1230 | 133 | 1.35 |
| 50 | s.m. | 1.0 | 1.0 | 19.3 | 0.3 | 1.7 | 24.2 | 1390 | 167 | 1.00 |
| 70 | s.m. | 1.1 | 1.0 | 22.3 | 0.3 | 1.9 | 27.6 | 1890 | 206 | 0.69 |
| 95 | s.m. | 1.1 | 1.2 | 25.4 | 0.3 | 2.0 | 30.9 | 2500 | 249 | 0.52 |
| 120 | s.m. | 1.2 | 1.2 | 28.1 | 0.3 | 2.1 | 33.8 | 3080 | 288 | 0.42 |
| 150 | s.m. | 1.4 | 1.2 | 31.1 | 0.3 | 2.3 | 37.2 | 3830 | 331 | 0.35 |
| 185 | s.m. | 1.6 | 1.4 | 35.0 | 0.3 | 2.5 | 41.5 | 4630 | 377 | 0.29 |
| 240 | s.m. | 1.7 | 1.4 | 39.1 | 0.3 | 2.6 | 45.8 | 5880 | 444 | 0.24 |
| 300 | s.m. | 1.8 | 1.6 | 43.3 | 0.3 | 2.8 | 50.4 | 7290 | 511 | 0.21 |
| 400 | s.m. | 2.0 | 1.6 | 48.4 | 0.3 | 3.1 | 56.1 | 9210 | 611 | 0.19 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded, s.m. - shaped stranded

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - THREE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 8.5 | 0.3 | 1.2 | 12.4 | 240 | 16 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 9.4 | 0.3 | 1.2 | 13.3 | 290 | 21 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 10.6 | 0.3 | 1.3 | 14.7 | 370 | 28 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 11.8 | 0.3 | 1.3 | 15.9 | 460 | 36 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 13.8 | 0.3 | 1.4 | 18.1 | 640 | 50 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 15.4 | 0.3 | 1.4 | 19.7 | 840 | 67 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 19.0 | 0.3 | 1.6 | 23.7 | 1240 | 89 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 21.5 | 0.3 | 1.7 | 26.4 | 1610 | 110 | 1.15 |
| 50 | s.m. | 1.0 | 1.0 | 22.5 | 0.3 | 1.8 | 27.6 | 1960 | 137 | 0.87 |
| 70 | s.m. | 1.1 | 1.2 | 26.5 | 0.3 | 2.0 | 32.0 | 2730 | 169 | 0.60 |
| 95 | s.m. | 1.1 | 1.2 | 29.8 | 0.3 | 2.1 | 35.5 | 3580 | 205 | 0.45 |
| 120 | s.m. | 1.2 | 1.2 | 33.0 | 0.3 | 2.2 | 38.9 | 4430 | 237 | 0.37 |
| 150 | s.m. | 1.4 | 1.4 | 37.0 | 0.3 | 2.4 | 43.3 | 5580 | 272 | 0.30 |
| 185 | s.m. | 1.6 | 1.4 | 41.2 | 0.3 | 2.6 | 47.9 | 6690 | 311 | 0.26 |
| 240 | s.m. | 1.7 | 1.6 | 46.6 | 0.3 | 2.8 | 53.7 | 8620 | 365 | 0.21 |
| 300 | s.m. | 1.8 | 1.6 | 51.2 | 0.3 | 3.0 | 58.7 | 10620 | 421 | 0.185 |

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - FOUR CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 9.3 | 0.3 | 1.2 | 13.2 | 280 | 16 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 10.3 | 0.3 | 1.2 | 14.2 | 340 | 21 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 11.6 | 0.3 | 1.3 | 15.7 | 440 | 28 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 13.0 | 0.3 | 1.3 | 17.1 | 550 | 36 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 780 | 50 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 17.0 | 0.3 | 1.5 | 21.5 | 1050 | 67 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 21.0 | 0.3 | 1.7 | 25.9 | 1560 | 89 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 23.8 | 0.3 | 1.8 | 28.9 | 2040 | 110 | 1.15 |
| 50 | s.m. | 1.0 | 1.0 | 25.5 | 0.3 | 1.9 | 30.8 | 2560 | 137 | 0.87 |
| 70 | s.m. | 1.1 | 1.2 | 30.0 | 0.3 | 2.1 | 35.7 | 3570 | 169 | 0.60 |
| 95 | s.m. | 1.1 | 1.2 | 33.9 | 0.3 | 2.2 | 39.8 | 4700 | 205 | 0.45 |
| 120 | s.m. | 1.2 | 1.4 | 38.0 | 0.3 | 2.4 | 44.3 | 5900 | 237 | 0.37 |
| 150 | s.m. | 1.4 | 1.4 | 42.1 | 0.3 | 2.6 | 48.8 | 7360 | 272 | 0.30 |
| 185 | s.m. | 1.6 | 1.4 | 46.9 | 0.3 | 2.8 | 54.0 | 8850 | 311 | 0.26 |
| 240 | s.m. | 1.7 | 1.6 | 53.0 | 0.3 | 3.0 | 60.5 | 11410 | 365 | 0.21 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded, s.m. - shaped stranded

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - FIVE CORES — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 0.7 | 1.0 | 10.2 | 0.3 | 1.2 | 14.1 | 320 | 13 | 27 |
| 2.5 | r.m. | 0.7 | 1.0 | 11.3 | 0.3 | 1.3 | 15.4 | 400 | 18 | 16 |
| 4 | r.m. | 0.7 | 1.0 | 12.8 | 0.3 | 1.3 | 16.9 | 510 | 23 | 10 |
| 6 | r.m. | 0.7 | 1.0 | 14.3 | 0.3 | 1.4 | 18.6 | 660 | 30 | 6.8 |
| 10 | r.m. | 0.7 | 1.0 | 16.8 | 0.3 | 1.5 | 21.3 | 940 | 42 | 4.0 |
| 16 | c.c. | 0.7 | 1.0 | 18.8 | 0.3 | 1.6 | 23.5 | 1280 | 56 | 2.5 |
| 25 | c.c. | 0.9 | 1.0 | 23.2 | 0.3 | 1.7 | 28.1 | 1890 | 74 | 1.65 |
| 35 | c.c. | 0.9 | 1.0 | 26.4 | 0.3 | 1.9 | 31.7 | 2490 | 92 | 1.15 |
| 50 | c.c. | 1.0 | 1.2 | 30.9 | 0.3 | 2.0 | 36.4 | 3280 | 115 | 0.87 |
| 70 | c.c. | 1.1 | 1.2 | 36.0 | 0.3 | 2.2 | 41.9 | 4500 | 142 | 0.60 |
| 95 | c.c. | 1.1 | 1.4 | 41.2 | 0.3 | 2.4 | 47.5 | 6030 | 171 | 0.45 |

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - MULTI-CORES ( 1.5 mm² ) — 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 1.5 | r.m. | 0.7 | 1.0 | 11.1 | 0.3 | 1.3 | 15.2 | 370 | 13 |
| 7 | 1.5 | r.m. | 0.7 | 1.0 | 11.1 | 0.3 | 1.3 | 15.2 | 380 | 12 |
| 8 | 1.5 | r.m. | 0.7 | 1.0 | 12.0 | 0.3 | 1.3 | 16.1 | 420 | 12 |
| 9 | 1.5 | r.m. | 0.7 | 1.0 | 12.9 | 0.3 | 1.4 | 17.2 | 470 | 11 |
| 10 | 1.5 | r.m. | 0.7 | 1.0 | 14.1 | 0.3 | 1.4 | 18.4 | 510 | 11 |
| 11 | 1.5 | r.m. | 0.7 | 1.0 | 14.1 | 0.3 | 1.4 | 18.4 | 530 | 10 |
| 12 | 1.5 | r.m. | 0.7 | 1.0 | 14.5 | 0.3 | 1.4 | 18.8 | 560 | 10 |
| 13 | 1.5 | r.m. | 0.7 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 600 | 10 |
| 14 | 1.5 | r.m. | 0.7 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 620 | 10 |
| 15 | 1.5 | r.m. | 0.7 | 1.0 | 16.2 | 0.3 | 1.5 | 20.7 | 670 | 9 |
| 16 | 1.5 | r.m. | 0.7 | 1.0 | 16.2 | 0.3 | 1.5 | 20.7 | 690 | 9 |
| 17 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 0.3 | 1.5 | 21.6 | 730 | 9 |
| 18 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 0.3 | 1.5 | 21.6 | 750 | 9 |
| 19 | 1.5 | r.m. | 0.7 | 1.0 | 17.1 | 0.3 | 1.5 | 21.6 | 770 | 9 |
| 20 | 1.5 | r.m. | 0.7 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 810 | 8 |
| 21 | 1.5 | r.m. | 0.7 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 830 | 8 |
| 24 | 1.5 | r.m. | 0.7 | 1.0 | 20.0 | 0.3 | 1.6 | 24.7 | 940 | 8 |
| 27 | 1.5 | r.m. | 0.7 | 1.0 | 20.5 | 0.3 | 1.6 | 25.2 | 1000 | 8 |
| 30 | 1.5 | r.m. | 0.7 | 1.0 | 21.3 | 0.3 | 1.7 | 26.2 | 1090 | 7 |
| 37 | 1.5 | r.m. | 0.7 | 1.0 | 23.0 | 0.3 | 1.7 | 27.9 | 1270 | 7 |
| 48 | 1.5 | r.m. | 0.7 | 1.0 | 26.5 | 0.3 | 1.9 | 31.8 | 1600 | 6 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - MULTI-CORES ( 2.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 2.5 | r.m. | 0.7 | 1.0 | 12.3 | 0.3 | 1.3 | 16.4 | 460 | 17 |
| 7 | 2.5 | r.m. | 0.7 | 1.0 | 12.3 | 0.3 | 1.3 | 16.4 | 470 | 16 |
| 8 | 2.5 | r.m. | 0.7 | 1.0 | 13.4 | 0.3 | 1.4 | 17.7 | 540 | 15 |
| 9 | 2.5 | r.m. | 0.7 | 1.0 | 14.4 | 0.3 | 1.4 | 18.7 | 590 | 14 |
| 10 | 2.5 | r.m. | 0.7 | 1.0 | 15.7 | 0.3 | 1.5 | 20.2 | 650 | 14 |
| 11 | 2.5 | r.m. | 0.7 | 1.0 | 15.7 | 0.3 | 1.5 | 20.2 | 680 | 13 |
| 12 | 2.5 | r.m. | 0.7 | 1.0 | 16.3 | 0.3 | 1.5 | 20.8 | 730 | 13 |
| 13 | 2.5 | r.m. | 0.7 | 1.0 | 17.2 | 0.3 | 1.5 | 21.7 | 780 | 13 |
| 14 | 2.5 | r.m. | 0.7 | 1.0 | 17.2 | 0.3 | 1.5 | 21.7 | 810 | 12 |
| 15 | 2.5 | r.m. | 0.7 | 1.0 | 18.1 | 0.3 | 1.5 | 22.6 | 860 | 12 |
| 16 | 2.5 | r.m. | 0.7 | 1.0 | 18.1 | 0.3 | 1.5 | 22.6 | 890 | 12 |
| 17 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 0.3 | 1.6 | 23.8 | 950 | 12 |
| 18 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 0.3 | 1.6 | 23.8 | 980 | 11 |
| 19 | 2.5 | r.m. | 0.7 | 1.0 | 19.1 | 0.3 | 1.6 | 23.8 | 1010 | 11 |
| 20 | 2.5 | r.m. | 0.7 | 1.0 | 20.2 | 0.3 | 1.6 | 24.9 | 1060 | 11 |
| 21 | 2.5 | r.m. | 0.7 | 1.0 | 20.2 | 0.3 | 1.6 | 24.9 | 1090 | 11 |
| 24 | 2.5 | r.m. | 0.7 | 1.0 | 22.6 | 0.3 | 1.7 | 27.5 | 1240 | 10 |
| 27 | 2.5 | r.m. | 0.7 | 1.0 | 23.1 | 0.3 | 1.7 | 28.0 | 1340 | 10 |
| 30 | 2.5 | r.m. | 0.7 | 1.0 | 24.0 | 0.3 | 1.8 | 29.1 | 1460 | 10 |
| 37 | 2.5 | r.m. | 0.7 | 1.0 | 26.0 | 0.3 | 1.8 | 31.1 | 1720 | 9 |
| 48 | 2.5 | r.m. | 0.7 | 1.2 | 30.4 | 0.3 | 2.0 | 35.9 | 2210 | 8 |

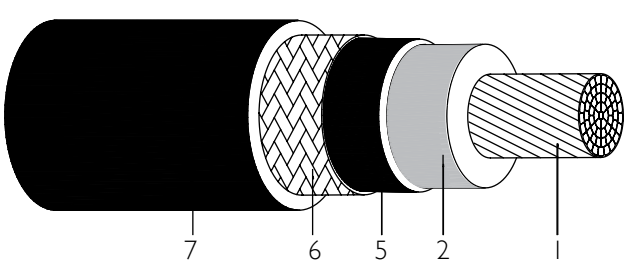
## TYPE P3 : CU/XLPE/PVC/SWB/PVC CABLE - MULTI-CORES ( 4 mm² ) 0.6/1 (1.2) kV

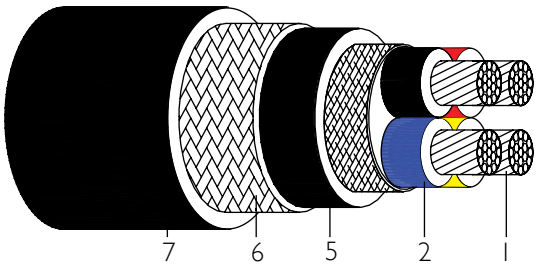
| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 4 | r.m. | 0.7 | 1.0 | 14.0 | 0.3 | 1.4 | 18.3 | 600 | 22 |
| 7 | 4 | r.m. | 0.7 | 1.0 | 14.0 | 0.3 | 1.4 | 18.3 | 630 | 21 |
| 8 | 4 | r.m. | 0.7 | 1.0 | 15.2 | 0.3 | 1.5 | 19.7 | 730 | 20 |
| 9 | 4 | r.m. | 0.7 | 1.0 | 16.4 | 0.3 | 1.5 | 20.9 | 810 | 19 |
| 10 | 4 | r.m. | 0.7 | 1.0 | 17.9 | 0.3 | 1.5 | 22.4 | 860 | 19 |
| 11 | 4 | r.m. | 0.7 | 1.0 | 17.9 | 0.3 | 1.5 | 22.4 | 910 | 18 |
| 12 | 4 | r.m. | 0.7 | 1.0 | 18.5 | 0.3 | 1.6 | 23.2 | 980 | 17 |
| 13 | 4 | r.m. | 0.7 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 1050 | 17 |
| 14 | 4 | r.m. | 0.7 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 1090 | 17 |
| 15 | 4 | r.m. | 0.7 | 1.0 | 20.7 | 0.3 | 1.6 | 25.4 | 1170 | 16 |
| 16 | 4 | r.m. | 0.7 | 1.0 | 20.7 | 0.3 | 1.6 | 25.4 | 1220 | 16 |
| 17 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 0.3 | 1.7 | 26.8 | 1290 | 16 |
| 18 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 0.3 | 1.7 | 26.8 | 1340 | 15 |
| 19 | 4 | r.m. | 0.7 | 1.0 | 21.9 | 0.3 | 1.7 | 26.8 | 1390 | 15 |
| 20 | 4 | r.m. | 0.7 | 1.0 | 23.1 | 0.3 | 1.7 | 28.0 | 1500 | 15 |
| 21 | 4 | r.m. | 0.7 | 1.0 | 23.1 | 0.3 | 1.7 | 28.0 | 1520 | 14 |
| 24 | 4 | r.m. | 0.7 | 1.0 | 25.8 | 0.3 | 1.8 | 30.9 | 1710 | 14 |
| 27 | 4 | r.m. | 0.7 | 1.0 | 26.4 | 0.3 | 1.9 | 31.7 | 1860 | 13 |
| 30 | 4 | r.m. | 0.7 | 1.0 | 27.5 | 0.3 | 1.9 | 32.8 | 2030 | 13 |
| 37 | 4 | r.m. | 0.7 | 1.2 | 30.3 | 0.3 | 2.0 | 35.8 | 2450 | 12 |
| 48 | 4 | r.m. | 0.7 | 1.2 | 34.8 | 0.3 | 2.2 | 40.7 | 3100 | 11 |

Note : r.m. - circular stranded

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED FLAME RETARDANT CABLE

## TYPE P4A : CU/EPR/EVA/TCWB/EVA CABLE
## CU/EPR/EVA/SWB/EVA CABLE 0.6/1 (1.2) kV




**DESCRIPTION**

Single-core and multi-core cables with copper conductor, EPR insulated, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 0.6/1 (1.2) kV.

**CONSTRUCTION**

1 **Conductor**
Plain circular or compacted stranded copper conductor, conforming to IEC 60228 class 2.

2 **Insulation**
EPR ( Ethylene propylene rubber )

3 **Colours for core identification**
Single core - Black
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black
Five core & above - white core with numbering
Earth core - green/yellow

4 **Cabling**
Two, three, four, five or more insulated cores are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

5 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

6 **Armour**
Single Core -- Tinned copper wire shall be braided over the bedding- ( TCWB ).
Multi Cores -- Galvanized steel wire shall be braided over the bedding- ( SWB ).

7 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black.

**SPECIFICATIONS:**

IEC 60092, IEC 60502
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE P4A : CU/EPR/EVA/TCWB/EVA CABLE - SINGLE CORE 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of tinned copper wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 16 | c.c. | 1.0 | 1.0 | 8.8 | 0.3 | 1.2 | 12.7 | 360 | 96 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 10.4 | 0.3 | 1.3 | 14.5 | 500 | 127 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 11.6 | 0.3 | 1.3 | 15.7 | 620 | 157 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 13.2 | 0.3 | 1.4 | 17.5 | 790 | 196 | 0.87 |
| 70 | c.c. | 1.4 | 1.0 | 14.9 | 0.3 | 1.4 | 19.2 | 1030 | 242 | 0.62 |
| 95 | c.c. | 1.6 | 1.0 | 17.0 | 0.3 | 1.5 | 21.5 | 1360 | 293 | 0.47 |
| 120 | c.c. | 1.6 | 1.0 | 18.6 | 0.3 | 1.6 | 23.3 | 1650 | 339 | 0.39 |
| 150 | c.c. | 1.8 | 1.0 | 20.4 | 0.3 | 1.6 | 25.1 | 2020 | 389 | 0.33 |
| 185 | c.c. | 2.0 | 1.0 | 22.6 | 0.3 | 1.7 | 27.5 | 2390 | 444 | 0.28 |
| 240 | c.c. | 2.2 | 1.0 | 25.4 | 0.3 | 1.8 | 30.5 | 3050 | 522 | 0.24 |

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - TWO CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 9.1 | 0.3 | 1.2 | 13.0 | 250 | 20 | 31 |
| 2.5 | r.m. | 1.0 | 1.0 | 9.9 | 0.3 | 1.2 | 13.8 | 290 | 26 | 19 |
| 4 | r.m. | 1.0 | 1.0 | 10.9 | 0.3 | 1.3 | 15.0 | 360 | 34 | 12 |
| 6 | r.m. | 1.0 | 1.0 | 12.0 | 0.3 | 1.3 | 16.1 | 430 | 44 | 7.9 |
| 10 | r.m. | 1.0 | 1.0 | 13.8 | 0.3 | 1.4 | 18.1 | 570 | 61 | 4.7 |
| 16 | c.c. | 1.0 | 1.0 | 15.3 | 0.3 | 1.5 | 19.8 | 730 | 82 | 2.9 |
| 25 | c.c. | 1.2 | 1.0 | 18.5 | 0.3 | 1.6 | 23.2 | 1040 | 108 | 1.9 |
| 35 | c.c. | 1.2 | 1.0 | 20.7 | 0.3 | 1.7 | 25.6 | 1310 | 133 | 1.35 |
| 50 | c.c. | 1.4 | 1.0 | 24.2 | 0.3 | 1.8 | 29.3 | 1700 | 167 | 1.00 |
| 70 | c.c. | 1.4 | 1.0 | 27.4 | 0.3 | 1.9 | 32.7 | 2240 | 206 | 0.69 |
| 95 | c.c. | 1.6 | 1.2 | 32.1 | 0.3 | 2.1 | 37.8 | 3010 | 249 | 0.52 |
| 120 | c.c. | 1.6 | 1.2 | 35.0 | 0.3 | 2.2 | 40.9 | 3650 | 288 | 0.42 |
| 150 | c.c. | 1.8 | 1.2 | 38.6 | 0.3 | 2.3 | 44.7 | 4480 | 331 | 0.35 |
| 185 | c.c. | 2.0 | 1.4 | 43.2 | 0.3 | 2.5 | 49.7 | 5410 | 377 | 0.29 |
| 240 | c.c. | 2.2 | 1.4 | 48.7 | 0.3 | 2.7 | 55.6 | 6900 | 444 | 0.24 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - THREE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 9.6 | 0.3 | 1.2 | 13.5 | 290 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 10.5 | 0.3 | 1.3 | 14.6 | 350 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 11.6 | 0.3 | 1.3 | 15.7 | 420 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 12.8 | 0.3 | 1.4 | 17.1 | 520 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 14.7 | 0.3 | 1.4 | 19.0 | 700 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 16.3 | 0.3 | 1.5 | 20.8 | 920 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 19.7 | 0.3 | 1.6 | 24.4 | 1330 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 22.1 | 0.3 | 1.7 | 27.0 | 1700 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 25.8 | 0.3 | 1.9 | 31.1 | 2230 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 29.8 | 0.3 | 2.0 | 35.3 | 3020 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 34.3 | 0.3 | 2.2 | 40.2 | 4030 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.2 | 37.5 | 0.3 | 2.3 | 43.6 | 4920 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 41.8 | 0.3 | 2.5 | 48.3 | 6160 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.4 | 46.3 | 0.3 | 2.6 | 53.0 | 7340 | 311 | 0.26 |
| 240 | c.c. | 2.2 | 1.6 | 52.7 | 0.3 | 2.9 | 60.0 | 9510 | 365 | 0.21 |

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - FOUR CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 10.5 | 0.3 | 1.3 | 14.6 | 340 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 11.5 | 0.3 | 1.3 | 15.6 | 400 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 12.8 | 0.3 | 1.4 | 17.1 | 510 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 14.1 | 0.3 | 1.4 | 18.4 | 630 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 16.3 | 0.3 | 1.5 | 20.8 | 870 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 18.0 | 0.3 | 1.6 | 22.7 | 1150 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 21.8 | 0.3 | 1.7 | 26.7 | 1670 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 24.6 | 0.3 | 1.8 | 29.7 | 2160 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 29.1 | 0.3 | 2.0 | 34.6 | 2870 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 33.0 | 0.3 | 2.1 | 38.7 | 3860 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 38.1 | 0.3 | 2.3 | 44.2 | 5170 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.4 | 42.1 | 0.3 | 2.5 | 48.6 | 6400 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 46.4 | 0.3 | 2.7 | 53.3 | 7950 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.6 | 51.9 | 0.3 | 2.9 | 59.2 | 9560 | 311 | 0.26 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - FIVE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 11.5 | 0.3 | 1.3 | 15.6 | 390 | 13 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 12.6 | 0.3 | 1.4 | 16.9 | 480 | 18 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 14.0 | 0.3 | 1.4 | 18.3 | 600 | 23 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 15.5 | 0.3 | 1.5 | 20.0 | 750 | 30 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 1040 | 42 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 19.9 | 0.3 | 1.6 | 24.6 | 1390 | 56 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 24.2 | 0.3 | 1.8 | 29.3 | 2050 | 74 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 27.3 | 0.3 | 1.9 | 32.6 | 2650 | 92 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 32.2 | 0.3 | 2.1 | 37.9 | 3520 | 115 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 36.6 | 0.3 | 2.3 | 42.7 | 4770 | 142 | 0.60 |
| 95 | c.c. | 1.6 | 1.4 | 42.7 | 0.3 | 2.5 | 49.2 | 6400 | 171 | 0.45 |

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - MULTI-CORES ( 1.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 1.5 | r.m. | 1.0 | 1.0 | 12.5 | 0.3 | 1.3 | 16.6 | 450 | 13 |
| 7 | 1.5 | r.m. | 1.0 | 1.0 | 12.5 | 0.3 | 1.3 | 16.6 | 460 | 12 |
| 8 | 1.5 | r.m. | 1.0 | 1.0 | 13.6 | 0.3 | 1.4 | 17.9 | 520 | 12 |
| 9 | 1.5 | r.m. | 1.0 | 1.0 | 14.7 | 0.3 | 1.5 | 19.2 | 590 | 11 |
| 10 | 1.5 | r.m. | 1.0 | 1.0 | 16.0 | 0.3 | 1.5 | 20.5 | 630 | 11 |
| 11 | 1.5 | r.m. | 1.0 | 1.0 | 16.0 | 0.3 | 1.5 | 20.5 | 660 | 10 |
| 12 | 1.5 | r.m. | 1.0 | 1.0 | 16.6 | 0.3 | 1.5 | 21.1 | 700 | 10 |
| 13 | 1.5 | r.m. | 1.0 | 1.0 | 17.5 | 0.3 | 1.5 | 22.0 | 750 | 10 |
| 14 | 1.5 | r.m. | 1.0 | 1.0 | 17.5 | 0.3 | 1.5 | 22.0 | 780 | 10 |
| 15 | 1.5 | r.m. | 1.0 | 1.0 | 18.5 | 0.3 | 1.6 | 23.2 | 840 | 9 |
| 16 | 1.5 | r.m. | 1.0 | 1.0 | 18.5 | 0.3 | 1.6 | 23.2 | 870 | 9 |
| 17 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 910 | 9 |
| 18 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 940 | 9 |
| 19 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 970 | 9 |
| 20 | 1.5 | r.m. | 1.0 | 1.0 | 20.6 | 0.3 | 1.7 | 25.5 | 1030 | 8 |
| 21 | 1.5 | r.m. | 1.0 | 1.0 | 20.6 | 0.3 | 1.7 | 25.5 | 1060 | 8 |
| 24 | 1.5 | r.m. | 1.0 | 1.0 | 23.0 | 0.3 | 1.8 | 28.1 | 1200 | 8 |
| 27 | 1.5 | r.m. | 1.0 | 1.0 | 23.5 | 0.3 | 1.8 | 28.6 | 1280 | 8 |
| 30 | 1.5 | r.m. | 1.0 | 1.0 | 24.4 | 0.3 | 1.8 | 29.5 | 1380 | 7 |
| 37 | 1.5 | r.m. | 1.0 | 1.0 | 26.5 | 0.3 | 1.9 | 31.8 | 1630 | 7 |
| 48 | 1.5 | r.m. | 1.0 | 1.2 | 31.0 | 0.3 | 2.1 | 36.7 | 2100 | 6 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - MULTI-CORES ( 2.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 2.5 | r.m. | 1.0 | 1.0 | 13.8 | 0.3 | 1.4 | 18.1 | 550 | 17 |
| 7 | 2.5 | r.m. | 1.0 | 1.0 | 13.8 | 0.3 | 1.4 | 18.1 | 570 | 16 |
| 8 | 2.5 | r.m. | 1.0 | 1.0 | 15.0 | 0.3 | 1.5 | 19.5 | 660 | 15 |
| 9 | 2.5 | r.m. | 1.0 | 1.0 | 16.2 | 0.3 | 1.5 | 20.7 | 730 | 14 |
| 10 | 2.5 | r.m. | 1.0 | 1.0 | 17.7 | 0.3 | 1.5 | 22.2 | 780 | 14 |
| 11 | 2.5 | r.m. | 1.0 | 1.0 | 17.7 | 0.3 | 1.5 | 22.2 | 820 | 13 |
| 12 | 2.5 | r.m. | 1.0 | 1.0 | 18.3 | 0.3 | 1.6 | 23.0 | 880 | 13 |
| 13 | 2.5 | r.m. | 1.0 | 1.0 | 19.3 | 0.3 | 1.6 | 24.0 | 940 | 13 |
| 14 | 2.5 | r.m. | 1.0 | 1.0 | 19.3 | 0.3 | 1.6 | 24.0 | 980 | 12 |
| 15 | 2.5 | r.m. | 1.0 | 1.0 | 20.4 | 0.3 | 1.7 | 25.3 | 1060 | 12 |
| 16 | 2.5 | r.m. | 1.0 | 1.0 | 20.4 | 0.3 | 1.7 | 25.3 | 1100 | 12 |
| 17 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 0.3 | 1.7 | 26.4 | 1160 | 12 |
| 18 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 0.3 | 1.7 | 26.4 | 1190 | 11 |
| 19 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 0.3 | 1.7 | 26.4 | 1230 | 11 |
| 20 | 2.5 | r.m. | 1.0 | 1.0 | 22.7 | 0.3 | 1.8 | 27.8 | 1310 | 11 |
| 21 | 2.5 | r.m. | 1.0 | 1.0 | 22.7 | 0.3 | 1.8 | 27.8 | 1350 | 11 |
| 24 | 2.5 | r.m. | 1.0 | 1.0 | 25.4 | 0.3 | 1.9 | 30.7 | 1530 | 10 |
| 27 | 2.5 | r.m. | 1.0 | 1.0 | 26.0 | 0.3 | 1.9 | 31.3 | 1650 | 10 |
| 30 | 2.5 | r.m. | 1.0 | 1.0 | 27.0 | 0.3 | 1.9 | 32.3 | 1780 | 10 |
| 37 | 2.5 | r.m. | 1.0 | 1.2 | 29.8 | 0.3 | 2.0 | 35.3 | 2160 | 9 |
| 48 | 2.5 | r.m. | 1.0 | 1.2 | 34.3 | 0.3 | 2.2 | 40.2 | 2720 | 8 |

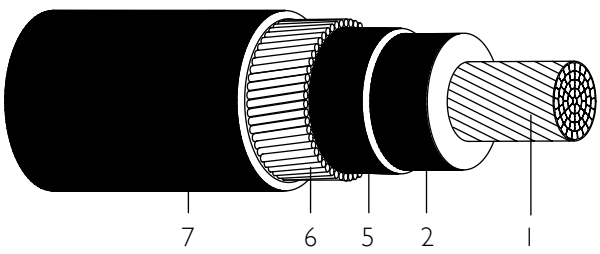
## TYPE P4A : CU/EPR/EVA/SWB/EVA CABLE - MULTI-CORES ( 4 mm² ) 0.6/1 (1.2) kV

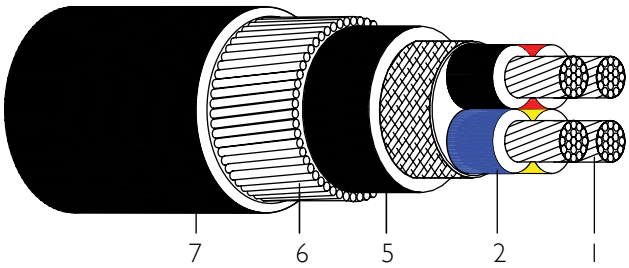
| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 4 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.5 | 19.8 | 700 | 22 |
| 7 | 4 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.5 | 19.8 | 730 | 21 |
| 8 | 4 | r.m. | 1.0 | 1.0 | 16.7 | 0.3 | 1.5 | 21.2 | 840 | 20 |
| 9 | 4 | r.m. | 1.0 | 1.0 | 18.0 | 0.3 | 1.6 | 22.7 | 970 | 19 |
| 10 | 4 | r.m. | 1.0 | 1.0 | 19.8 | 0.3 | 1.6 | 24.5 | 1010 | 19 |
| 11 | 4 | r.m. | 1.0 | 1.0 | 19.8 | 0.3 | 1.6 | 24.5 | 1070 | 18 |
| 12 | 4 | r.m. | 1.0 | 1.0 | 20.4 | 0.3 | 1.7 | 25.3 | 1150 | 17 |
| 13 | 4 | r.m. | 1.0 | 1.0 | 21.6 | 0.3 | 1.7 | 26.5 | 1230 | 17 |
| 14 | 4 | r.m. | 1.0 | 1.0 | 21.6 | 0.3 | 1.7 | 26.5 | 1290 | 17 |
| 15 | 4 | r.m. | 1.0 | 1.0 | 22.8 | 0.3 | 1.7 | 27.7 | 1380 | 16 |
| 16 | 4 | r.m. | 1.0 | 1.0 | 22.8 | 0.3 | 1.7 | 27.7 | 1440 | 16 |
| 17 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 0.3 | 1.8 | 29.3 | 1520 | 16 |
| 18 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 0.3 | 1.8 | 29.3 | 1580 | 15 |
| 19 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 0.3 | 1.8 | 29.3 | 1630 | 15 |
| 20 | 4 | r.m. | 1.0 | 1.0 | 25.5 | 0.3 | 1.9 | 30.8 | 1750 | 15 |
| 21 | 4 | r.m. | 1.0 | 1.0 | 25.5 | 0.3 | 1.9 | 30.8 | 1810 | 14 |
| 24 | 4 | r.m. | 1.0 | 1.2 | 29.1 | 0.3 | 2.0 | 34.6 | 2080 | 14 |
| 27 | 4 | r.m. | 1.0 | 1.2 | 29.8 | 0.3 | 2.0 | 35.3 | 2260 | 13 |
| 30 | 4 | r.m. | 1.0 | 1.2 | 30.9 | 0.3 | 2.1 | 36.6 | 2480 | 13 |
| 37 | 4 | r.m. | 1.0 | 1.2 | 33.5 | 0.3 | 2.2 | 39.4 | 2950 | 12 |
| 48 | 4 | r.m. | 1.0 | 1.2 | 38.6 | 0.3 | 2.4 | 44.9 | 3730 | 11 |

Note : r.m. - circular stranded

# ETHYLENE PROPYLENE RUBBER INSULATED ARMOURED EVA SHEATHED FLAME RETARDANT CABLE

## TYPE P4B : CU/EPR/EVA/AWA/EVA CABLE
## CU/EPR/EVA/SWA/EVA CABLE 0.6/1 (1.2) kV




**DESCRIPTION**

Single-core and multi-core cables with copper conductor, EPR insulated, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire armouring and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 0.6/1 (1.2) kV.

**CONSTRUCTION**

**1 Conductor**
Plain circular or compacted stranded copper conductor, conforming to IEC 60228 class 2.

**2 Insulation**
EPR ( Ethylene propylene rubber )

**3 Colours for core identification**
Single core - Black
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black
Five core & above - white core with numbering
Earth core - green/yellow

**4 Cabling**
Two, three, four, five or more insulated cores are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

**5 Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

**6 Armour**
Single Core -- Aluminium wire shall be applied over the bedding- ( AWA ).
Multi Cores -- Galvanized steel wire shall be applied over the bedding- ( SWA ).

**7 Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black.

**SPECIFICATIONS:**

IEC 60502, IEC 60092
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE P4B : CU/EPR/EVA/AWA/EVA CABLE - SINGLE CORE — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of aluminium wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 16 | c.c. | 1.0 | 1.0 | 8.8 | 0.9 | 1.8 | 14.2 | 380 | 96 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 10.4 | 0.9 | 1.8 | 15.8 | 510 | 127 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 11.6 | 0.9 | 1.8 | 17.0 | 630 | 157 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 13.2 | 1.25 | 1.8 | 19.3 | 830 | 196 | 0.87 |
| 70 | c.c. | 1.4 | 1.0 | 14.9 | 1.25 | 1.8 | 21.0 | 1080 | 242 | 0.62 |
| 95 | c.c. | 1.6 | 1.0 | 17.0 | 1.25 | 1.8 | 23.1 | 1390 | 293 | 0.47 |
| 120 | c.c. | 1.6 | 1.0 | 18.6 | 1.6 | 1.8 | 25.9 | 1730 | 339 | 0.39 |
| 150 | c.c. | 1.8 | 1.0 | 20.4 | 1.6 | 1.8 | 27.7 | 2100 | 389 | 0.33 |
| 185 | c.c. | 2.0 | 1.0 | 22.6 | 1.6 | 1.8 | 29.9 | 2470 | 444 | 0.28 |
| 240 | c.c. | 2.2 | 1.0 | 25.4 | 1.6 | 1.9 | 32.9 | 3130 | 522 | 0.24 |

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - TWO CORES — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 9.1 | 0.9 | 1.8 | 14.5 | 390 | 20 | 31 |
| 2.5 | r.m. | 1.0 | 1.0 | 9.9 | 0.9 | 1.8 | 15.3 | 440 | 26 | 19 |
| 4 | r.m. | 1.0 | 1.0 | 10.9 | 0.9 | 1.8 | 16.3 | 510 | 34 | 12 |
| 6 | r.m. | 1.0 | 1.0 | 12.0 | 1.25 | 1.8 | 18.1 | 700 | 44 | 7.9 |
| 10 | r.m. | 1.0 | 1.0 | 13.8 | 1.25 | 1.8 | 19.9 | 860 | 61 | 4.7 |
| 16 | c.c. | 1.0 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 1040 | 82 | 2.9 |
| 25 | c.c. | 1.2 | 1.0 | 18.5 | 1.6 | 1.8 | 25.3 | 1550 | 108 | 1.9 |
| 35 | c.c. | 1.2 | 1.0 | 20.7 | 1.6 | 1.8 | 27.5 | 1860 | 133 | 1.35 |
| 50 | c.c. | 1.4 | 1.0 | 24.2 | 1.6 | 1.9 | 31.2 | 2330 | 167 | 1.00 |
| 70 | c.c. | 1.4 | 1.0 | 27.4 | 2.0 | 2.0 | 35.4 | 3180 | 206 | 0.69 |
| 95 | c.c. | 1.6 | 1.2 | 32.1 | 2.0 | 2.2 | 40.5 | 4110 | 249 | 0.52 |
| 120 | c.c. | 1.6 | 1.2 | 35.0 | 2.0 | 2.3 | 43.6 | 4840 | 288 | 0.42 |
| 150 | c.c. | 1.8 | 1.2 | 38.6 | 2.5 | 2.4 | 49.4 | 6190 | 331 | 0.35 |
| 185 | c.c. | 2.0 | 1.4 | 43.2 | 2.5 | 2.6 | 54.4 | 7350 | 377 | 0.29 |
| 240 | c.c. | 2.2 | 1.4 | 48.7 | 2.5 | 2.8 | 60.3 | 9060 | 444 | 0.24 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - THREE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 9.6 | 0.9 | 1.8 | 15.0 | 430 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 10.5 | 0.9 | 1.8 | 15.9 | 490 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 11.6 | 1.25 | 1.8 | 17.7 | 680 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 12.8 | 1.25 | 1.8 | 18.9 | 800 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 14.7 | 1.25 | 1.8 | 20.8 | 1010 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 16.3 | 1.25 | 1.8 | 22.4 | 1250 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 19.7 | 1.6 | 1.8 | 26.5 | 1870 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 22.1 | 1.6 | 1.8 | 28.9 | 2290 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 25.8 | 1.6 | 2.0 | 33.0 | 2900 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 29.8 | 2.0 | 2.1 | 38.0 | 4050 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 34.3 | 2.0 | 2.2 | 42.7 | 5180 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.2 | 37.5 | 2.0 | 2.3 | 46.1 | 6180 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 41.8 | 2.5 | 2.5 | 52.8 | 7990 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.4 | 46.3 | 2.5 | 2.7 | 57.7 | 9380 | 311 | 0.26 |
| 240 | c.c. | 2.2 | 1.6 | 52.7 | 2.5 | 2.9 | 64.5 | 11810 | 365 | 0.21 |

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - FOUR CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 10.5 | 0.9 | 1.8 | 15.9 | 490 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 11.5 | 0.9 | 1.8 | 16.9 | 570 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 12.8 | 1.25 | 1.8 | 18.9 | 790 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 14.1 | 1.25 | 1.8 | 20.2 | 930 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 16.3 | 1.25 | 1.8 | 22.4 | 1200 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 18.0 | 1.6 | 1.8 | 24.8 | 1650 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 21.8 | 1.6 | 1.8 | 28.6 | 2250 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 24.6 | 1.6 | 1.9 | 31.6 | 2810 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 29.1 | 2.0 | 2.1 | 37.3 | 3890 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 33.0 | 2.0 | 2.2 | 41.4 | 4980 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 38.1 | 2.5 | 2.4 | 48.9 | 6890 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.4 | 42.1 | 2.5 | 2.5 | 53.1 | 8240 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 46.4 | 2.5 | 2.7 | 57.8 | 9970 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.6 | 51.9 | 2.5 | 2.9 | 63.7 | 11830 | 311 | 0.26 |
| 240 | c.c. | 2.2 | 1.6 | 58.5 | 2.5 | 3.1 | 70.7 | 14790 | 365 | 0.21 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - FIVE CORES — 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 11.5 | 0.9 | 1.8 | 16.9 | 550 | 13 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 12.6 | 1.25 | 1.8 | 18.7 | 750 | 18 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 14.0 | 1.25 | 1.8 | 20.1 | 900 | 23 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 15.5 | 1.25 | 1.8 | 21.6 | 1070 | 30 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 18.0 | 1.6 | 1.8 | 24.8 | 1550 | 42 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 19.9 | 1.6 | 1.8 | 26.7 | 1940 | 56 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 24.2 | 1.6 | 1.9 | 31.2 | 2680 | 74 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 27.3 | 2.0 | 2.0 | 35.3 | 3600 | 92 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 32.2 | 2.0 | 2.2 | 40.6 | 4620 | 115 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 36.6 | 2.0 | 2.3 | 45.2 | 5970 | 142 | 0.60 |
| 95 | c.c. | 1.6 | 1.4 | 42.7 | 2.5 | 2.5 | 53.7 | 8280 | 171 | 0.45 |

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - MULTI-CORES ( 1.5 mm² ) — 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 1.5 | r.m. | 1.0 | 1.0 | 12.5 | 1.25 | 1.8 | 18.6 | 730 | 13 |
| 7 | 1.5 | r.m. | 1.0 | 1.0 | 12.5 | 1.25 | 1.8 | 18.6 | 740 | 12 |
| 8 | 1.5 | r.m. | 1.0 | 1.0 | 13.6 | 1.25 | 1.8 | 19.7 | 810 | 12 |
| 9 | 1.5 | r.m. | 1.0 | 1.0 | 14.7 | 1.25 | 1.8 | 20.8 | 890 | 11 |
| 10 | 1.5 | r.m. | 1.0 | 1.0 | 16.0 | 1.25 | 1.8 | 22.1 | 960 | 11 |
| 11 | 1.5 | r.m. | 1.0 | 1.0 | 16.0 | 1.25 | 1.8 | 22.1 | 990 | 10 |
| 12 | 1.5 | r.m. | 1.0 | 1.0 | 16.6 | 1.25 | 1.8 | 22.7 | 1030 | 10 |
| 13 | 1.5 | r.m. | 1.0 | 1.0 | 17.5 | 1.6 | 1.8 | 24.3 | 1250 | 10 |
| 14 | 1.5 | r.m. | 1.0 | 1.0 | 17.5 | 1.6 | 1.8 | 24.3 | 1270 | 10 |
| 15 | 1.5 | r.m. | 1.0 | 1.0 | 18.5 | 1.6 | 1.8 | 25.3 | 1350 | 9 |
| 16 | 1.5 | r.m. | 1.0 | 1.0 | 18.5 | 1.6 | 1.8 | 25.3 | 1380 | 9 |
| 17 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 1.6 | 1.8 | 26.3 | 1450 | 9 |
| 18 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 1.6 | 1.8 | 26.3 | 1480 | 9 |
| 19 | 1.5 | r.m. | 1.0 | 1.0 | 19.5 | 1.6 | 1.8 | 26.3 | 1500 | 9 |
| 20 | 1.5 | r.m. | 1.0 | 1.0 | 20.6 | 1.6 | 1.8 | 27.4 | 1570 | 8 |
| 21 | 1.5 | r.m. | 1.0 | 1.0 | 20.6 | 1.6 | 1.8 | 27.4 | 1600 | 8 |
| 24 | 1.5 | r.m. | 1.0 | 1.0 | 23.0 | 1.6 | 1.9 | 30.0 | 1800 | 8 |
| 27 | 1.5 | r.m. | 1.0 | 1.0 | 23.5 | 1.6 | 1.9 | 30.5 | 1900 | 8 |
| 30 | 1.5 | r.m. | 1.0 | 1.0 | 24.4 | 1.6 | 1.9 | 31.4 | 2020 | 7 |
| 37 | 1.5 | r.m. | 1.0 | 1.0 | 26.5 | 1.6 | 2.0 | 33.7 | 2320 | 7 |
| 48 | 1.5 | r.m. | 1.0 | 1.2 | 31.0 | 2.0 | 2.1 | 39.2 | 3160 | 6 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - MULTI-CORES ( 2.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 2.5 | r.m. | 1.0 | 1.0 | 13.8 | 1.25 | 1.8 | 19.9 | 850 | 17 |
| 7 | 2.5 | r.m. | 1.0 | 1.0 | 13.8 | 1.25 | 1.8 | 19.9 | 870 | 16 |
| 8 | 2.5 | r.m. | 1.0 | 1.0 | 15.0 | 1.25 | 1.8 | 21.1 | 970 | 15 |
| 9 | 2.5 | r.m. | 1.0 | 1.0 | 16.2 | 1.6 | 1.8 | 23.0 | 1200 | 14 |
| 10 | 2.5 | r.m. | 1.0 | 1.0 | 17.7 | 1.6 | 1.8 | 24.5 | 1280 | 14 |
| 11 | 2.5 | r.m. | 1.0 | 1.0 | 17.7 | 1.6 | 1.8 | 24.5 | 1320 | 13 |
| 12 | 2.5 | r.m. | 1.0 | 1.0 | 18.3 | 1.6 | 1.8 | 25.1 | 1390 | 13 |
| 13 | 2.5 | r.m. | 1.0 | 1.0 | 19.3 | 1.6 | 1.8 | 26.1 | 1470 | 13 |
| 14 | 2.5 | r.m. | 1.0 | 1.0 | 19.3 | 1.6 | 1.8 | 26.1 | 1510 | 12 |
| 15 | 2.5 | r.m. | 1.0 | 1.0 | 20.4 | 1.6 | 1.8 | 27.2 | 1610 | 12 |
| 16 | 2.5 | r.m. | 1.0 | 1.0 | 20.4 | 1.6 | 1.8 | 27.2 | 1640 | 12 |
| 17 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 1.6 | 1.8 | 28.3 | 1720 | 12 |
| 18 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 1.6 | 1.8 | 28.3 | 1760 | 11 |
| 19 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 1.6 | 1.8 | 28.3 | 1800 | 11 |
| 20 | 2.5 | r.m. | 1.0 | 1.0 | 22.7 | 1.6 | 1.9 | 29.7 | 1910 | 11 |
| 21 | 2.5 | r.m. | 1.0 | 1.0 | 22.7 | 1.6 | 1.9 | 29.7 | 1940 | 11 |
| 24 | 2.5 | r.m. | 1.0 | 1.0 | 25.4 | 1.6 | 1.9 | 32.4 | 2180 | 10 |
| 27 | 2.5 | r.m. | 1.0 | 1.0 | 26.0 | 1.6 | 2.0 | 33.2 | 2320 | 10 |
| 30 | 2.5 | r.m. | 1.0 | 1.0 | 27.0 | 2.0 | 2.0 | 35.0 | 2730 | 10 |
| 37 | 2.5 | r.m. | 1.0 | 1.2 | 29.8 | 2.0 | 2.1 | 38.0 | 3190 | 9 |
| 48 | 2.5 | r.m. | 1.0 | 1.2 | 34.3 | 2.0 | 2.3 | 42.9 | 3890 | 8 |

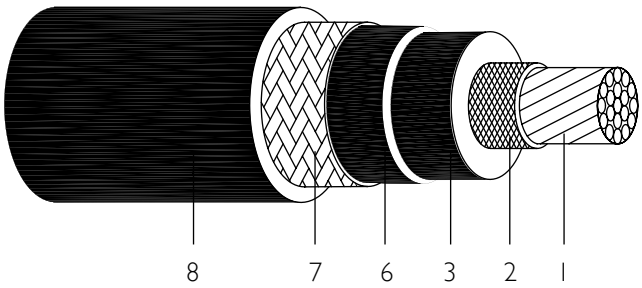
## TYPE P4B : CU/EPR/EVA/SWA/EVA CABLE - MULTI-CORES ( 4 mm² ) 0.6/1 (1.2) kV

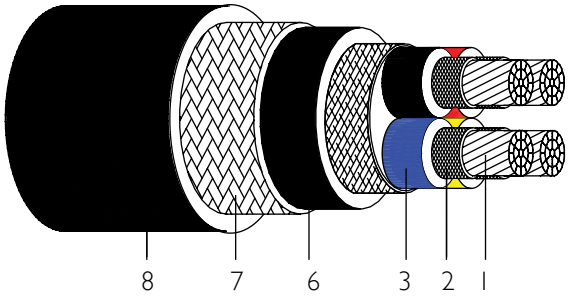
| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 4 | r.m. | 1.0 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 1020 | 22 |
| 7 | 4 | r.m. | 1.0 | 1.0 | 15.3 | 1.25 | 1.8 | 21.4 | 1050 | 21 |
| 8 | 4 | r.m. | 1.0 | 1.0 | 16.7 | 1.6 | 1.8 | 23.5 | 1320 | 20 |
| 9 | 4 | r.m. | 1.0 | 1.0 | 18.0 | 1.6 | 1.8 | 24.8 | 1440 | 19 |
| 10 | 4 | r.m. | 1.0 | 1.0 | 19.8 | 1.6 | 1.8 | 26.6 | 1550 | 19 |
| 11 | 4 | r.m. | 1.0 | 1.0 | 19.8 | 1.6 | 1.8 | 26.6 | 1610 | 18 |
| 12 | 4 | r.m. | 1.0 | 1.0 | 20.4 | 1.6 | 1.8 | 27.2 | 1690 | 17 |
| 13 | 4 | r.m. | 1.0 | 1.0 | 21.6 | 1.6 | 1.8 | 28.4 | 1800 | 17 |
| 14 | 4 | r.m. | 1.0 | 1.0 | 21.6 | 1.6 | 1.8 | 28.4 | 1860 | 17 |
| 15 | 4 | r.m. | 1.0 | 1.0 | 22.8 | 1.6 | 1.8 | 29.6 | 1980 | 16 |
| 16 | 4 | r.m. | 1.0 | 1.0 | 22.8 | 1.6 | 1.8 | 29.6 | 2030 | 16 |
| 17 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 1.6 | 1.9 | 31.2 | 2160 | 16 |
| 18 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 1.6 | 1.9 | 31.2 | 2210 | 15 |
| 19 | 4 | r.m. | 1.0 | 1.0 | 24.2 | 1.6 | 1.9 | 31.2 | 2270 | 15 |
| 20 | 4 | r.m. | 1.0 | 1.0 | 25.5 | 1.6 | 1.9 | 32.5 | 2380 | 15 |
| 21 | 4 | r.m. | 1.0 | 1.0 | 25.5 | 1.6 | 1.9 | 32.5 | 2430 | 14 |
| 24 | 4 | r.m. | 1.0 | 1.2 | 29.1 | 2.0 | 2.1 | 37.3 | 3090 | 14 |
| 27 | 4 | r.m. | 1.0 | 1.2 | 29.8 | 2.0 | 2.1 | 38.0 | 3300 | 13 |
| 30 | 4 | r.m. | 1.0 | 1.2 | 30.9 | 2.0 | 2.1 | 39.1 | 3510 | 13 |
| 37 | 4 | r.m. | 1.0 | 1.2 | 33.5 | 2.0 | 2.2 | 41.9 | 4070 | 12 |
| 48 | 4 | r.m. | 1.0 | 1.2 | 38.6 | 2.5 | 2.4 | 49.4 | 5420 | 11 |

Note : r.m. - circular stranded

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED FIRE RESISTANT AND FLAME RETARDANT CABLE

## TYPE P5 : CU/MICA/EPR/EVA/TCWB/EVA CABLE
## CU/MICA/EPR/EVA/SWB/EVA CABLE 0.6/1 (1.2) kV




**DESCRIPTION**

Single-core and multi-core cables with copper conductor, mica tape, EPR insulated, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 0.6/1 (1.2) kV.

**CONSTRUCTION**

1 **Conductor**
Plain circular or compacted stranded copper conductor, conforming to IEC 60228 class 2.

2 **Fire proof layer**
Mica tape

3 **Insulation**
EPR ( Ethylene propylene rubber )

4 **Colours for core identification**
Single core - Black
Two core - red, black
Three core - red, yellow and blue
Four core - red, yellow, blue and black
Five core & above - white core with numbering
Earth core - green/yellow

5 **Cabling**
Two, three, four, five or more insulated cores are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

6 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

7 **Armour**
Single Core -- Tinned copper wire shall be braided over the bedding- ( TCWB ).
Multi Cores -- Galvanized steel wire shall be braided over the bedding- ( SWB ).

8 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black.

**SPECIFICATIONS:**

IEC 60092, IEC 60502
IEC 60331
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE P5 : CU/MICA/EPR/EVA/TCWB/EVA CABLE - SINGLE CORE 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of tinned copper wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 16 | c.c. | 1.0 | 1.0 | 9.4 | 0.3 | 1.2 | 13.3 | 380 | 96 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 11.1 | 0.3 | 1.3 | 15.2 | 530 | 127 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 12.2 | 0.3 | 1.3 | 16.3 | 650 | 157 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 13.8 | 0.3 | 1.4 | 18.1 | 820 | 196 | 0.87 |
| 70 | c.c. | 1.4 | 1.0 | 15.5 | 0.3 | 1.4 | 19.8 | 1060 | 242 | 0.62 |
| 95 | c.c. | 1.6 | 1.0 | 17.7 | 0.3 | 1.5 | 22.2 | 1380 | 293 | 0.47 |
| 120 | c.c. | 1.6 | 1.0 | 19.2 | 0.3 | 1.6 | 23.9 | 1670 | 339 | 0.39 |
| 150 | c.c. | 1.8 | 1.0 | 21.0 | 0.3 | 1.6 | 25.7 | 2040 | 389 | 0.33 |
| 185 | c.c. | 2.0 | 1.0 | 23.2 | 0.3 | 1.7 | 28.1 | 2420 | 444 | 0.28 |
| 240 | c.c. | 2.2 | 1.0 | 26.0 | 0.3 | 1.8 | 31.1 | 3080 | 522 | 0.24 |

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - TWO CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 10.1 | 0.3 | 1.2 | 14.0 | 280 | 20 | 31 |
| 2.5 | r.m. | 1.0 | 1.0 | 10.9 | 0.3 | 1.2 | 14.8 | 320 | 26 | 19 |
| 4 | r.m. | 1.0 | 1.0 | 11.9 | 0.3 | 1.3 | 16.0 | 390 | 34 | 12 |
| 6 | r.m. | 1.0 | 1.0 | 13.0 | 0.3 | 1.3 | 17.1 | 460 | 44 | 7.9 |
| 10 | r.m. | 1.0 | 1.0 | 14.8 | 0.3 | 1.4 | 19.1 | 600 | 61 | 4.7 |
| 16 | c.c. | 1.0 | 1.0 | 16.5 | 0.3 | 1.5 | 21.0 | 780 | 82 | 2.9 |
| 25 | c.c. | 1.2 | 1.0 | 19.7 | 0.3 | 1.6 | 24.4 | 1090 | 108 | 1.9 |
| 35 | c.c. | 1.2 | 1.0 | 21.9 | 0.3 | 1.7 | 26.8 | 1370 | 133 | 1.35 |
| 50 | c.c. | 1.4 | 1.0 | 25.4 | 0.3 | 1.8 | 30.5 | 1760 | 167 | 1.00 |
| 70 | c.c. | 1.4 | 1.0 | 28.7 | 0.3 | 1.9 | 34.0 | 2310 | 206 | 0.69 |
| 95 | c.c. | 1.6 | 1.2 | 33.3 | 0.3 | 2.1 | 39.0 | 3080 | 249 | 0.52 |
| 120 | c.c. | 1.6 | 1.2 | 36.2 | 0.3 | 2.2 | 42.1 | 3720 | 288 | 0.42 |
| 150 | c.c. | 1.8 | 1.2 | 39.8 | 0.3 | 2.3 | 45.9 | 4550 | 331 | 0.35 |
| 185 | c.c. | 2.0 | 1.4 | 44.4 | 0.3 | 2.5 | 50.9 | 5500 | 377 | 0.29 |
| 240 | c.c. | 2.2 | 1.4 | 49.9 | 0.3 | 2.7 | 56.8 | 7000 | 444 | 0.24 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - THREE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 10.7 | 0.3 | 1.2 | 14.6 | 320 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 11.6 | 0.3 | 1.3 | 15.7 | 380 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 12.7 | 0.3 | 1.3 | 16.8 | 460 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 13.9 | 0.3 | 1.4 | 18.2 | 560 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 15.8 | 0.3 | 1.4 | 20.1 | 740 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 17.6 | 0.3 | 1.5 | 22.1 | 980 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 21.0 | 0.3 | 1.6 | 25.7 | 1390 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 23.4 | 0.3 | 1.7 | 28.3 | 1760 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.0 | 27.1 | 0.3 | 1.9 | 32.4 | 2300 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 31.1 | 0.3 | 2.0 | 36.6 | 3100 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 35.6 | 0.3 | 2.2 | 41.5 | 4110 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.2 | 38.8 | 0.3 | 2.3 | 44.9 | 5000 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 43.1 | 0.3 | 2.5 | 49.6 | 6240 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.4 | 47.6 | 0.3 | 2.6 | 54.3 | 7430 | 311 | 0.26 |
| 240 | c.c. | 2.2 | 1.6 | 54.0 | 0.3 | 2.9 | 61.3 | 9600 | 365 | 0.21 |

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - FOUR CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 11.7 | 0.3 | 1.3 | 15.8 | 380 | 16 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 12.7 | 0.3 | 1.3 | 16.8 | 450 | 21 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 14.0 | 0.3 | 1.4 | 18.3 | 560 | 28 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 680 | 36 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 17.5 | 0.3 | 1.5 | 22.0 | 920 | 50 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 19.5 | 0.3 | 1.6 | 24.2 | 1220 | 67 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 23.3 | 0.3 | 1.7 | 28.2 | 1750 | 89 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 26.0 | 0.3 | 1.8 | 31.1 | 2240 | 110 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 30.5 | 0.3 | 2.0 | 36.0 | 2970 | 137 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 34.5 | 0.3 | 2.1 | 40.2 | 3960 | 169 | 0.60 |
| 95 | c.c. | 1.6 | 1.2 | 39.6 | 0.3 | 2.3 | 45.7 | 5270 | 205 | 0.45 |
| 120 | c.c. | 1.6 | 1.4 | 43.5 | 0.3 | 2.5 | 50.0 | 6510 | 237 | 0.37 |
| 150 | c.c. | 1.8 | 1.4 | 47.9 | 0.3 | 2.7 | 54.8 | 8060 | 272 | 0.30 |
| 185 | c.c. | 2.0 | 1.6 | 53.3 | 0.3 | 2.9 | 60.6 | 9680 | 311 | 0.26 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - FIVE CORES 0.6/1 (1.2) kV

| Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C | Voltage drop |
|---|---|---|---|---|---|---|---|---|---|---|
| Area | Shape | | | | | | | | | |
| mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A | mV/A/m |
| 1.5 | r.m. | 1.0 | 1.0 | 12.9 | 0.3 | 1.3 | 17.0 | 450 | 13 | 27 |
| 2.5 | r.m. | 1.0 | 1.0 | 14.0 | 0.3 | 1.4 | 18.3 | 540 | 18 | 16 |
| 4 | r.m. | 1.0 | 1.0 | 15.4 | 0.3 | 1.4 | 19.7 | 660 | 23 | 10 |
| 6 | r.m. | 1.0 | 1.0 | 16.9 | 0.3 | 1.5 | 21.4 | 810 | 30 | 6.8 |
| 10 | r.m. | 1.0 | 1.0 | 19.3 | 0.3 | 1.5 | 23.8 | 1100 | 42 | 4.0 |
| 16 | c.c. | 1.0 | 1.0 | 21.5 | 0.3 | 1.6 | 26.2 | 1470 | 56 | 2.5 |
| 25 | c.c. | 1.2 | 1.0 | 25.8 | 0.3 | 1.8 | 30.9 | 2140 | 74 | 1.65 |
| 35 | c.c. | 1.2 | 1.0 | 28.9 | 0.3 | 1.9 | 34.2 | 2750 | 92 | 1.15 |
| 50 | c.c. | 1.4 | 1.2 | 33.8 | 0.3 | 2.1 | 39.5 | 3610 | 115 | 0.87 |
| 70 | c.c. | 1.4 | 1.2 | 38.2 | 0.3 | 2.3 | 44.3 | 4850 | 142 | 0.60 |
| 95 | c.c. | 1.6 | 1.4 | 44.3 | 0.3 | 2.5 | 50.8 | 6530 | 171 | 0.45 |

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - MULTI-CORES (1.5 mm²) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 1.5 | r.m. | 1.0 | 1.0 | 14.1 | 0.3 | 1.3 | 18.2 | 510 | 13 |
| 7 | 1.5 | r.m. | 1.0 | 1.0 | 14.1 | 0.3 | 1.3 | 18.2 | 520 | 12 |
| 8 | 1.5 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 610 | 12 |
| 9 | 1.5 | r.m. | 1.0 | 1.0 | 16.5 | 0.3 | 1.5 | 21.0 | 680 | 11 |
| 10 | 1.5 | r.m. | 1.0 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 720 | 11 |
| 11 | 1.5 | r.m. | 1.0 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 750 | 10 |
| 12 | 1.5 | r.m. | 1.0 | 1.0 | 18.7 | 0.3 | 1.5 | 23.2 | 800 | 10 |
| 13 | 1.5 | r.m. | 1.0 | 1.0 | 19.7 | 0.3 | 1.5 | 24.2 | 850 | 10 |
| 14 | 1.5 | r.m. | 1.0 | 1.0 | 19.7 | 0.3 | 1.5 | 24.2 | 880 | 10 |
| 15 | 1.5 | r.m. | 1.0 | 1.0 | 20.8 | 0.3 | 1.6 | 25.5 | 960 | 9 |
| 16 | 1.5 | r.m. | 1.0 | 1.0 | 20.8 | 0.3 | 1.6 | 25.5 | 990 | 9 |
| 17 | 1.5 | r.m. | 1.0 | 1.0 | 22.0 | 0.3 | 1.6 | 26.7 | 1040 | 9 |
| 18 | 1.5 | r.m. | 1.0 | 1.0 | 22.0 | 0.3 | 1.6 | 26.7 | 1070 | 9 |
| 19 | 1.5 | r.m. | 1.0 | 1.0 | 22.0 | 0.3 | 1.6 | 26.7 | 1100 | 9 |
| 20 | 1.5 | r.m. | 1.0 | 1.0 | 23.2 | 0.3 | 1.7 | 28.1 | 1170 | 8 |
| 21 | 1.5 | r.m. | 1.0 | 1.0 | 23.2 | 0.3 | 1.7 | 28.1 | 1200 | 8 |
| 24 | 1.5 | r.m. | 1.0 | 1.0 | 26.0 | 0.3 | 1.8 | 31.1 | 1370 | 8 |
| 27 | 1.5 | r.m. | 1.0 | 1.0 | 26.6 | 0.3 | 1.8 | 31.7 | 1460 | 8 |
| 30 | 1.5 | r.m. | 1.0 | 1.0 | 27.8 | 0.3 | 1.8 | 32.9 | 1580 | 7 |
| 37 | 1.5 | r.m. | 1.0 | 1.0 | 30.1 | 0.3 | 1.9 | 35.4 | 1870 | 7 |
| 48 | 1.5 | r.m. | 1.0 | 1.2 | 35.1 | 0.3 | 2.1 | 40.8 | 2400 | 6 |

Note : r.m. - circular stranded, c.c. - compacted circular stranded

## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - MULTI-CORES ( 2.5 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 2.5 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 620 | 17 |
| 7 | 2.5 | r.m. | 1.0 | 1.0 | 15.3 | 0.3 | 1.4 | 19.6 | 640 | 16 |
| 8 | 2.5 | r.m. | 1.0 | 1.0 | 16.6 | 0.3 | 1.5 | 21.1 | 740 | 15 |
| 9 | 2.5 | r.m. | 1.0 | 1.0 | 18.0 | 0.3 | 1.5 | 22.5 | 820 | 14 |
| 10 | 2.5 | r.m. | 1.0 | 1.0 | 19.7 | 0.3 | 1.5 | 24.2 | 870 | 14 |
| 11 | 2.5 | r.m. | 1.0 | 1.0 | 19.7 | 0.3 | 1.5 | 24.2 | 910 | 13 |
| 12 | 2.5 | r.m. | 1.0 | 1.0 | 20.4 | 0.3 | 1.6 | 25.1 | 980 | 13 |
| 13 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 0.3 | 1.6 | 26.2 | 1050 | 13 |
| 14 | 2.5 | r.m. | 1.0 | 1.0 | 21.5 | 0.3 | 1.6 | 26.2 | 1090 | 12 |
| 15 | 2.5 | r.m. | 1.0 | 1.0 | 22.8 | 0.3 | 1.7 | 27.7 | 1190 | 12 |
| 16 | 2.5 | r.m. | 1.0 | 1.0 | 22.8 | 0.3 | 1.7 | 27.7 | 1230 | 12 |
| 17 | 2.5 | r.m. | 1.0 | 1.0 | 24.1 | 0.3 | 1.7 | 29.0 | 1290 | 12 |
| 18 | 2.5 | r.m. | 1.0 | 1.0 | 24.1 | 0.3 | 1.7 | 29.0 | 1330 | 11 |
| 19 | 2.5 | r.m. | 1.0 | 1.0 | 24.1 | 0.3 | 1.7 | 29.0 | 1380 | 11 |
| 20 | 2.5 | r.m. | 1.0 | 1.0 | 25.4 | 0.3 | 1.8 | 30.5 | 1460 | 11 |
| 21 | 2.5 | r.m. | 1.0 | 1.0 | 25.4 | 0.3 | 1.8 | 30.5 | 1500 | 11 |
| 24 | 2.5 | r.m. | 1.0 | 1.0 | 28.6 | 0.3 | 1.9 | 33.9 | 1720 | 10 |
| 27 | 2.5 | r.m. | 1.0 | 1.0 | 29.2 | 0.3 | 1.9 | 34.5 | 1840 | 10 |
| 30 | 2.5 | r.m. | 1.0 | 1.0 | 30.4 | 0.3 | 1.9 | 35.7 | 2000 | 10 |
| 37 | 2.5 | r.m. | 1.0 | 1.2 | 33.4 | 0.3 | 2.0 | 38.9 | 2410 | 9 |
| 48 | 2.5 | r.m. | 1.0 | 1.2 | 38.4 | 0.3 | 2.2 | 44.3 | 3040 | 8 |

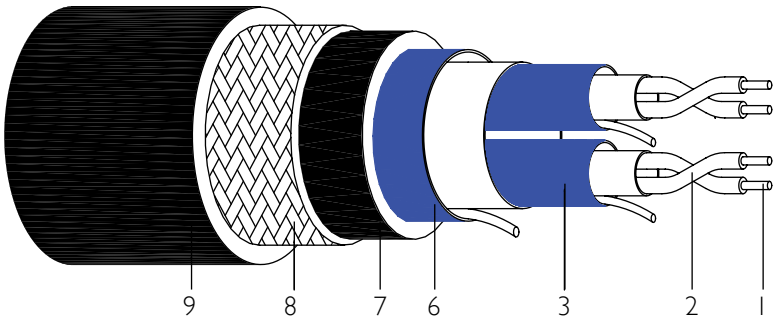
## TYPE P5 : CU/MICA/EPR/EVA/SWB/EVA CABLE - MULTI-CORES ( 4 mm² ) 0.6/1 (1.2) kV

| Number of cores | Conductor | | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight | Current rating at 45°C |
|---|---|---|---|---|---|---|---|---|---|---|
| | Area | Shape | | | | | | | | |
| | mm² | | mm | mm | mm | mm | mm | mm | Kg / Km | A |
| 6 | 4 | r.m. | 1.0 | 1.0 | 16.9 | 0.3 | 1.5 | 21.4 | 770 | 22 |
| 7 | 4 | r.m. | 1.0 | 1.0 | 16.9 | 0.3 | 1.5 | 21.4 | 800 | 21 |
| 8 | 4 | r.m. | 1.0 | 1.0 | 18.4 | 0.3 | 1.5 | 22.9 | 920 | 20 |
| 9 | 4 | r.m. | 1.0 | 1.0 | 19.9 | 0.3 | 1.6 | 24.6 | 1040 | 19 |
| 10 | 4 | r.m. | 1.0 | 1.0 | 21.8 | 0.3 | 1.6 | 26.5 | 1100 | 19 |
| 11 | 4 | r.m. | 1.0 | 1.0 | 21.8 | 0.3 | 1.6 | 26.5 | 1170 | 18 |
| 12 | 4 | r.m. | 1.0 | 1.0 | 22.5 | 0.3 | 1.7 | 27.4 | 1250 | 17 |
| 13 | 4 | r.m. | 1.0 | 1.0 | 23.8 | 0.3 | 1.7 | 28.7 | 1340 | 17 |
| 14 | 4 | r.m. | 1.0 | 1.0 | 23.8 | 0.3 | 1.7 | 28.7 | 1400 | 17 |
| 15 | 4 | r.m. | 1.0 | 1.0 | 25.2 | 0.3 | 1.7 | 30.1 | 1510 | 16 |
| 16 | 4 | r.m. | 1.0 | 1.0 | 25.2 | 0.3 | 1.7 | 30.1 | 1570 | 16 |
| 17 | 4 | r.m. | 1.0 | 1.0 | 26.7 | 0.3 | 1.8 | 31.8 | 1660 | 16 |
| 18 | 4 | r.m. | 1.0 | 1.0 | 26.7 | 0.3 | 1.8 | 31.8 | 1720 | 15 |
| 19 | 4 | r.m. | 1.0 | 1.0 | 26.7 | 0.3 | 1.8 | 31.8 | 1780 | 15 |
| 20 | 4 | r.m. | 1.0 | 1.0 | 28.3 | 0.3 | 1.9 | 33.6 | 1920 | 15 |
| 21 | 4 | r.m. | 1.0 | 1.0 | 28.3 | 0.3 | 1.9 | 33.6 | 1980 | 14 |
| 24 | 4 | r.m. | 1.0 | 1.2 | 32.1 | 0.3 | 2.0 | 37.6 | 2260 | 14 |
| 27 | 4 | r.m. | 1.0 | 1.2 | 32.9 | 0.3 | 2.0 | 38.4 | 2470 | 13 |
| 30 | 4 | r.m. | 1.0 | 1.2 | 34.1 | 0.3 | 2.1 | 39.8 | 2700 | 13 |
| 37 | 4 | r.m. | 1.0 | 1.2 | 37.0 | 0.3 | 2.2 | 42.9 | 3210 | 12 |
| 48 | 4 | r.m. | 1.0 | 1.2 | 42.7 | 0.3 | 2.4 | 49.0 | 4070 | 11 |

Note : r.m. - circular stranded

# POLYETHYLENE INSULATED BRAIDED LSOH SHEATHED INDIVIDUAL AND OVERALL SCREENED FLAME RETARDANT INSTRUMENT CABLE

## TYPE I1 : CU/PE/PE/SWB/LSOH INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single pair and multi-pair cables with copper conductor, PE insulated, individual and overall screened, polyethylene bedding, galvanised steel wire braided and flame retardant low smoke zero halogen compound sheathed. Cables are rated at 300/500 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular solid copper conductor, conforming to IEC 60228 or BS 6360 class 1.

2 **Insulation**
PE ( polyethylene )

3 **Pairing**
Two insulated cores shall be uniformly twisted together to form a pair with maximum lay length of 100 mm. Each pair is screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

4 **Pair identification**
Colour code

5 **Cabling**
The individually screened twisted pairs are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

6 **Screening**
The assembled twisted pairs are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

7 **Bedding**
Polyethylene compound, colour black.

8 **Armour**
Galvanized steel wire shall be braided over the bedding.

9 **Sheath**
Flame retardant low smoke zero halogen compound, colour black. ( IS - Blue )

**SPECIFICATIONS:**

BS 5308
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE I1 : CU/PE/PE/SWB/LSOH INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE 300/500 V

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.0 | 1 / 1.13 | 0.6 | 0.8 | 7.1 | 0.3 | 1.3 | 11.2 | 180 |
| 2 | 1.0 | 1 / 1.13 | 0.6 | 1.1 | 12.4 | 0.3 | 1.5 | 16.9 | 380 |
| 3 | 1.0 | 1 / 1.13 | 0.6 | 1.1 | 13.2 | 0.3 | 1.5 | 17.7 | 420 |
| 4 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 14.6 | 0.3 | 1.5 | 19.1 | 490 |
| 5 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 16.1 | 0.3 | 1.6 | 20.8 | 560 |
| 6 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 17.6 | 0.3 | 1.6 | 22.3 | 640 |
| 7 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 17.6 | 0.3 | 1.6 | 22.3 | 670 |
| 8 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 19.3 | 0.3 | 1.7 | 24.2 | 760 |
| 9 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 20.8 | 0.3 | 1.7 | 25.7 | 840 |
| 10 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 22.7 | 0.3 | 1.8 | 27.8 | 930 |
| 11 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 22.7 | 0.3 | 1.8 | 27.8 | 960 |
| 12 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 23.5 | 0.3 | 1.8 | 28.6 | 1020 |
| 13 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 23.5 | 0.3 | 1.8 | 28.6 | 1050 |
| 14 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 23.5 | 0.3 | 1.8 | 28.6 | 1090 |
| 15 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 25.3 | 0.3 | 1.9 | 30.6 | 1180 |
| 16 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 25.3 | 0.3 | 1.9 | 30.6 | 1220 |
| 17 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 26.7 | 0.3 | 1.9 | 32.0 | 1300 |
| 18 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 26.7 | 0.3 | 1.9 | 32.0 | 1340 |
| 19 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 26.7 | 0.3 | 1.9 | 32.0 | 1370 |
| 20 | 1.0 | 1 / 1.13 | 0.6 | 1.7 | 28.5 | 0.3 | 2.0 | 34.0 | 1470 |
| 21 | 1.0 | 1 / 1.13 | 0.6 | 1.7 | 28.5 | 0.3 | 2.0 | 34.0 | 1510 |
| 22 | 1.0 | 1 / 1.13 | 0.6 | 1.7 | 30.0 | 0.3 | 2.0 | 35.5 | 1600 |
| 23 | 1.0 | 1 / 1.13 | 0.6 | 1.7 | 30.0 | 0.3 | 2.0 | 35.5 | 1630 |
| 24 | 1.0 | 1 / 1.13 | 0.6 | 1.7 | 31.8 | 0.3 | 2.0 | 37.3 | 1710 |

## PAIR IDENTIFICATION :

| Pair No. | a-wire | b-wire |
|---|---|---|
| 1 | Black | Blue |
| 2 | Black | Green |
| 3 | Blue | Green |
| 4 | Black | Brown |
| 5 | Blue | Brown |
| 6 | Green | Brown |
| 7 | Black | White |
| 8 | Blue | White |
| 9 | Green | White |
| 10 | Brown | White |
| 11 | Black | Red |
| 12 | Blue | Red |

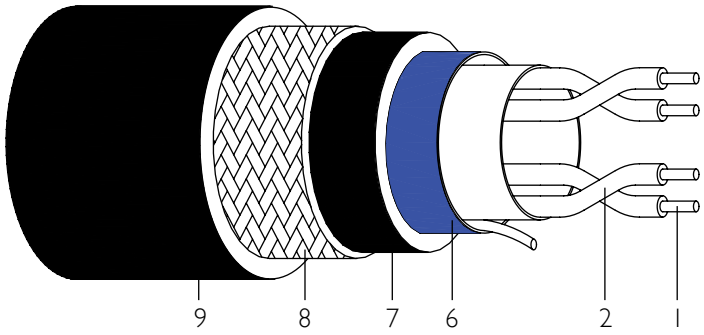
| Pair No. | a-wire | b-wire |
|---|---|---|
| 13 | Green | Red |
| 14 | Brown | Red |
| 15 | White | Red |
| 16 | Black | Orange |
| 17 | Blue | Orange |
| 18 | Green | Orange |
| 19 | Brown | Orange |
| 20 | White | Orange |
| 21 | Red | Orange |
| 22 | Black | Yellow |
| 23 | Blue | Yellow |
| 24 | Green | Yellow |

**Alternative method of identification of cable pairs:**

Single pair : Black, White
Multi pair : Black, White ( pairs are identified by number )

# POLYETHYLENE INSULATED BRAIDED LSOH SHEATHED OVERALL SCREENED FLAME RETARDANT INSTRUMENT CABLE

## TYPE I2 : CU/PE/PE/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single pair and multi-pair cables with copper conductor, PE insulated, overall screened, polyethylene bedding, galvanised steel wire braided and flame retardant low smoke zero halogen compound sheathed. Cables are rated at 300/500 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular solid copper conductor, conforming to IEC 60228 or BS 6360 class 1.

2 **Insulation**
PE ( polyethylene )

3 **Pairing**
Two insulated cores shall be uniformly twisted together to form a pair with maximum lay length of 100 mm.
Note : Two pair cables with overall screen shall have four cores laid in quad formation.

4 **Pair identification**
Colour code

5 **Cabling**
Twisted pairs are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

6 **Screening**
The assembled twisted pairs are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

7 **Bedding**
Polyethylene compound, colour black.

8 **Armour**
Galvanized steel wire shall be braided over the bedding.

9 **Sheath**
Flame retardant low smoke zero halogen compound, colour black. ( IS - Blue )

**SPECIFICATIONS:**

BS 5308
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE I2 : CU/PE/PE/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE 300/500 V

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.0 | 1 / 1.13 | 0.6 | 0.8 | 7.1 | 0.3 | 1.3 | 11.2 | 180 |
| 2 | 1.0 | 1 / 1.13 | 0.6 | 0.8 | 8.0 | 0.3 | 1.4 | 12.3 | 240 |
| 3 | 1.0 | 1 / 1.13 | 0.6 | 1.1 | 11.0 | 0.3 | 1.4 | 15.3 | 340 |
| 4 | 1.0 | 1 / 1.13 | 0.6 | 1.1 | 12.1 | 0.3 | 1.5 | 16.6 | 400 |
| 5 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 13.4 | 0.3 | 1.5 | 17.9 | 460 |
| 6 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 14.6 | 0.3 | 1.6 | 19.3 | 510 |
| 7 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 14.6 | 0.3 | 1.6 | 19.3 | 540 |
| 8 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 15.8 | 0.3 | 1.6 | 20.5 | 600 |
| 9 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 17.0 | 0.3 | 1.7 | 21.9 | 680 |
| 10 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 18.5 | 0.3 | 1.7 | 23.4 | 720 |
| 11 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 18.5 | 0.3 | 1.7 | 23.4 | 750 |
| 12 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 19.4 | 0.3 | 1.7 | 24.3 | 800 |
| 13 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 19.4 | 0.3 | 1.7 | 24.3 | 820 |
| 14 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 19.4 | 0.3 | 1.7 | 24.3 | 850 |
| 15 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 20.4 | 0.3 | 1.8 | 25.5 | 920 |
| 16 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 20.4 | 0.3 | 1.8 | 25.5 | 950 |
| 17 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 21.5 | 0.3 | 1.8 | 26.6 | 990 |
| 18 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 21.5 | 0.3 | 1.8 | 26.6 | 1020 |
| 19 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 21.5 | 0.3 | 1.8 | 26.6 | 1040 |
| 20 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 23.1 | 0.3 | 1.8 | 28.2 | 1130 |
| 21 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 23.1 | 0.3 | 1.8 | 28.2 | 1160 |
| 22 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 24.2 | 0.3 | 1.8 | 29.3 | 1200 |
| 23 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 24.2 | 0.3 | 1.8 | 29.3 | 1230 |
| 24 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 25.7 | 0.3 | 1.8 | 30.8 | 1290 |

## PAIR IDENTIFICATION :

| Pair No. | a-wire | b-wire |
|---|---|---|
| 1 | Black | Blue |
| 2 | Black | Green |
| 3 | Blue | Green |
| 4 | Black | Brown |
| 5 | Blue | Brown |
| 6 | Green | Brown |
| 7 | Black | White |
| 8 | Blue | White |
| 9 | Green | White |
| 10 | Brown | White |
| 11 | Black | Red |
| 12 | Blue | Red |

| Pair No. | a-wire | b-wire |
|---|---|---|
| 13 | Green | Red |
| 14 | Brown | Red |
| 15 | White | Red |
| 16 | Black | Orange |
| 17 | Blue | Orange |
| 18 | Green | Orange |
| 19 | Brown | Orange |
| 20 | White | Orange |
| 21 | Red | Orange |
| 22 | Black | Yellow |
| 23 | Blue | Yellow |
| 24 | Green | Yellow |

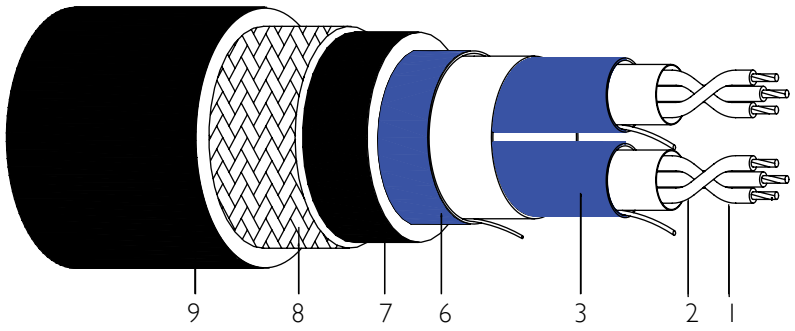
Note : Two pair cables with overall screen shall have four cores laid in quad formation; Black, Blue, Green, Brown in clockwise rotation.

**Alternative method of identification of cable pairs:**

Single pair : Black, White
Multi pair : Black, White ( pairs are identified by number )

# POLYETHYLENE INSULATED BRAIDED LSOH SHEATHED INDIVIDUAL AND OVERALL SCREENED FLAME RETARDANT INSTRUMENT CABLE

## TYPE I3 : CU/PE/PE/SWB/LSOH INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single triad and multi-triad cables with copper conductor, PE insulated, individual and overall screened, polyethylene bedding, galvanised steel wire braided and flame retardant low smoke zero halogen compound sheathed. Cables are rated at 300/500 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular solid copper conductor, conforming to IEC 60228 or BS 6360 class 1.

2 **Insulation**
PE ( polyethylene )

3 **Tripling**
Three insulated cores shall be uniformly twisted together to form a triad. Each triad is screened with aluminium/mylar tape, helically applied with metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

4 **Triad identification**
Colour code.

5 **Cabling**
The individually screened twisted triads are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

6 **Screening**
The assembled triads are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

7 **Bedding**
Polyethylene compound, colour black.

8 **Armour**
Galvanized steel wire shall be braided over the bedding.

9 **Sheath**
Flame retardant low smoke zero halogen compound, colour black. ( IS - Blue )

**SPECIFICATIONS:**

BS 5308
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE I3 : CU/PE/PE/SWB/LSOH INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE 300/500 V

| Number of triads | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.0 | 1 / 1.13 | 0.6 | 0.8 | 7.4 | 0.3 | 1.4 | 11.7 | 210 |
| 2 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 14.3 | 0.3 | 1.5 | 18.8 | 450 |
| 3 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 15.2 | 0.3 | 1.5 | 19.7 | 520 |
| 4 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 16.7 | 0.3 | 1.6 | 21.4 | 610 |
| 5 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 18.4 | 0.3 | 1.6 | 23.1 | 680 |
| 6 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 20.3 | 0.3 | 1.7 | 25.2 | 800 |
| 7 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 20.3 | 0.3 | 1.7 | 25.2 | 850 |
| 8 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 22.1 | 0.3 | 1.7 | 27.0 | 930 |
| 9 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 24.1 | 0.3 | 1.8 | 29.2 | 1060 |
| 10 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 26.3 | 0.3 | 1.8 | 31.4 | 1160 |
| 11 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 26.3 | 0.3 | 1.8 | 31.4 | 1230 |
| 12 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 27.4 | 0.3 | 1.9 | 32.7 | 1310 |

## TRIAD IDENTIFICATION :

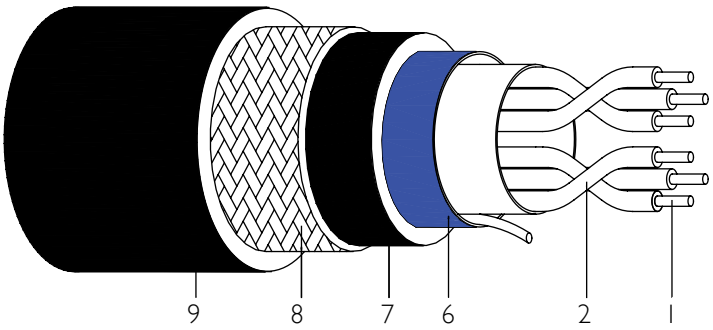
| Triad No. | a-wire | b-wire | c-wire |
|---|---|---|---|
| 1 | Black | Blue | Turquoise |
| 2 | Black | Green | Turquoise |
| 3 | Blue | Green | Turquoise |
| 4 | Black | Brown | Turquoise |
| 5 | Blue | Brown | Turquoise |
| 6 | Green | Brown | Turquoise |
| 7 | Black | White | Turquoise |
| 8 | Blue | White | Turquoise |
| 9 | Green | White | Turquoise |
| 10 | Brown | White | Turquoise |
| 11 | Black | Red | Turquoise |
| 12 | Blue | Red | Turquoise |

**Alternative method of identification of cable triads:**

Single triad : Black, White, Red
Multi triad : Black, White, Red ( triads are identified by number )

# POLYETHYLENE INSULATED BRAIDED LSOH SHEATHED OVERALL SCREENED FLAME RETARDANT INSTRUMENT CABLE

## TYPE I4 : CU/PE/PE/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single triad and multi-triad cables with copper conductor, PE insulated, overall screened, polyethylene bedding, galvanised steel wire braided and flame retardant low smoke zero halogen compound sheathed. Cables are rated at 300/500 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular solid copper conductor, conforming to IEC 60228 or BS 6360 class 1.

2 **Insulation**
PE ( polyethylene )

3 **Tripling**
Three insulated cores shall be uniformly twisted together to form a triad.

4 **Triad identification**
Colour code.

5 **Cabling**
Twisted triads are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

6 **Screening**
The assembled triads are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

7 **Bedding**
Polyethylene compound, colour black.

8 **Armour**
Galvanized steel wire shall be braided over the bedding.

9 **Sheath**
Flame retardant low smoke zero halogen compound, colour black. ( IS - Blue )

**SPECIFICATIONS:**

BS 5308
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE I4 : CU/PE/PE/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE 300/500 V

| Number of triads | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.0 | 1 / 1.13 | 0.6 | 0.8 | 7.4 | 0.3 | 1.4 | 11.7 | 210 |
| 2 | 1.0 | 1 / 1.13 | 0.6 | 1.1 | 12.5 | 0.3 | 1.5 | 17.0 | 380 |
| 3 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 13.5 | 0.3 | 1.5 | 18.0 | 450 |
| 4 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 14.8 | 0.3 | 1.5 | 19.3 | 520 |
| 5 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 16.3 | 0.3 | 1.6 | 21.0 | 600 |
| 6 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 17.8 | 0.3 | 1.6 | 22.5 | 670 |
| 7 | 1.0 | 1 / 1.13 | 0.6 | 1.2 | 17.8 | 0.3 | 1.6 | 22.5 | 710 |
| 8 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 19.5 | 0.3 | 1.7 | 24.4 | 820 |
| 9 | 1.0 | 1 / 1.13 | 0.6 | 1.3 | 21.0 | 0.3 | 1.8 | 26.1 | 920 |
| 10 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 23.2 | 0.3 | 1.8 | 28.3 | 990 |
| 11 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 23.2 | 0.3 | 1.8 | 28.3 | 1030 |
| 12 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 24.0 | 0.3 | 1.8 | 29.1 | 1090 |
| 13 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 24.2 | 0.3 | 1.9 | 29.5 | 1150 |
| 14 | 1.0 | 1 / 1.13 | 0.6 | 1.4 | 24.2 | 0.3 | 1.9 | 29.5 | 1190 |
| 15 | 1.0 | 1 / 1.13 | 0.6 | 1.5 | 25.7 | 0.3 | 1.9 | 31.0 | 1280 |

## TRIAD IDENTIFICATION :

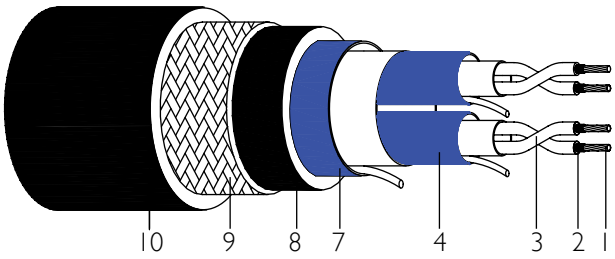
| Triad No. | a-wire | b-wire | c-wire |
|---|---|---|---|
| 1 | Black | Blue | Turquoise |
| 2 | Black | Green | Turquoise |
| 3 | Blue | Green | Turquoise |
| 4 | Black | Brown | Turquoise |
| 5 | Blue | Brown | Turquoise |
| 6 | Green | Brown | Turquoise |
| 7 | Black | White | Turquoise |
| 8 | Blue | White | Turquoise |
| 9 | Green | White | Turquoise |
| 10 | Brown | White | Turquoise |
| 11 | Black | Red | Turquoise |
| 12 | Blue | Red | Turquoise |
| 13 | Green | Red | Turquoise |
| 14 | Brown | Red | Turquoise |
| 15 | White | Red | Turquoise |

**Alternative method of identification of cable triads:**

Single triad : Black, White, Red
Multi triad : Black, White, Red ( triads are identified by number )

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED INDIVIDUAL AND OVERALL SCREENED FIRE RESISTANT AND FLAME RETARDANT INSTRUMENT CABLE

## TYPE F1 : CU/MICA/EPR/EVA/SWB/EVA INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single pair and multi-pair cables with copper conductor, mica tape, EPR insulated, individual and overall screened, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 250/450 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular stranded copper conductor, conforming to IEC 60228 or BS 6360 class 2.

2 **Fire proof layer**
Mica tape

3 **Insulation**
EPR ( Ethylene Propylene Rubber )

4 **Pairing**
Two insulated cores shall be uniformly twisted together to form a pair. Each pair is screened with aluminium/ mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

5 **Pair identification**
Single pair : Red, white
Multi pair : Red, white ( Pairs are identified by number ).

6 **Cabling**
The individually screened twisted pairs are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

7 **Screening**
The assembled twisted pairs are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

8 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

9 **Armour**
Galvanized steel wire shall be braided over the bedding.

10 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black. ( IS - Blue )

**SPECIFICATIONS:**

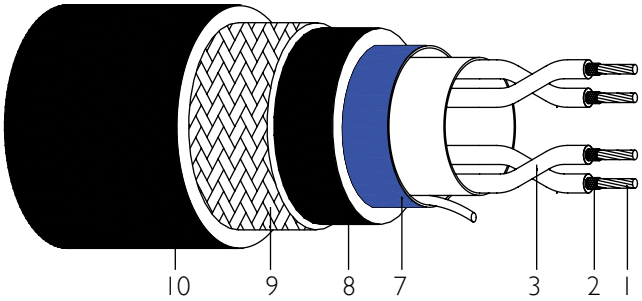
BS 6883, BS 7917
IEC 60092
IEC 60331
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE F1 : CU/MICA/EPR/EVA/SWB/EVA INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE 250/450 V

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.5 | 7 / 0.53 | 0.8 | 1.1 | 10.4 | 0.3 | 1.2 | 14.3 | 300 |
| 2 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 17.7 | 0.3 | 1.4 | 22.0 | 610 |
| 3 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 18.8 | 0.3 | 1.5 | 23.3 | 710 |
| 4 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 20.9 | 0.3 | 1.6 | 25.6 | 860 |
| 5 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 23.0 | 0.3 | 1.6 | 27.7 | 990 |
| 6 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 25.4 | 0.3 | 1.7 | 30.3 | 1130 |
| 7 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 25.4 | 0.3 | 1.7 | 30.3 | 1210 |
| 8 | 1.5 | 7 / 0.53 | 0.8 | 1.6 | 27.9 | 0.3 | 1.8 | 33.0 | 1400 |
| 9 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 30.5 | 0.3 | 1.9 | 35.8 | 1600 |
| 10 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 33.5 | 0.3 | 2.0 | 39.0 | 1780 |
| 11 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 33.5 | 0.3 | 2.0 | 39.0 | 1850 |
| 12 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 34.7 | 0.3 | 2.0 | 40.2 | 1910 |
| 13 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 35.0 | 0.3 | 2.1 | 40.7 | 2030 |
| 14 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 35.0 | 0.3 | 2.1 | 40.7 | 2100 |
| 15 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 37.0 | 0.3 | 2.2 | 42.9 | 2270 |
| 16 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 37.0 | 0.3 | 2.2 | 42.9 | 2340 |
| 17 | 1.5 | 7 / 0.53 | 0.8 | 2.0 | 39.3 | 0.3 | 2.2 | 45.2 | 2480 |
| 18 | 1.5 | 7 / 0.53 | 0.8 | 2.0 | 39.3 | 0.3 | 2.2 | 45.2 | 2560 |
| 19 | 1.5 | 7 / 0.53 | 0.8 | 2.0 | 39.3 | 0.3 | 2.2 | 45.2 | 2630 |
| 20 | 1.5 | 7 / 0.53 | 0.8 | 2.1 | 41.6 | 0.3 | 2.3 | 47.7 | 2830 |

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED OVERALL SCREENED FIRE RESISTANT AND FLAME RETARDANT INSTRUMENT CABLE

## TYPE F2 : CU/MICA/EPR/EVA/SWB/EVA OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single pair and multi-pair cables with copper conductor, mica tape, EPR insulated, overall screened, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 250/450 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular stranded copper conductor, conforming to IEC 60228 or BS 6360 class 2.

2 **Fire proof layer**
Mica tape

3 **Insulation**
EPR ( Ethylene Propylene Rubber )

4 **Pairing**
Two insulated cores shall be uniformly twisted together to form a pair.
Note : Two pair cables with overall screen shall have four cores laid in quad formation.

5 **Pair identification**
Single pair : Red, white
Multi pair : Red, white ( Pairs are identified by number ).

6 **Cabling**
Twisted pairs are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

7 **Screening**
The assembled twisted pairs are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

8 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

9 **Armour**
Galvanized steel wire shall be braided over the bedding.

10 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black. ( IS - Blue )

**SPECIFICATIONS:**

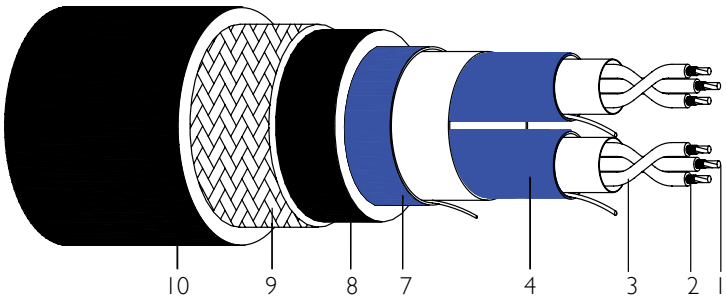
BS 6883, BS 7917
IEC 60092
IEC 60331
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE F2 : CU/MICA/EPR/EVA/SWB/EVA OVERALL SCREENED INSTRUMENT CABLE 250/450 V

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.5 | 7 / 0.53 | 0.8 | 1.1 | 10.4 | 0.3 | 1.2 | 14.3 | 300 |
| 2 | 1.5 | 7 / 0.53 | 0.8 | 1.1 | 11.9 | 0.3 | 1.2 | 15.8 | 390 |
| 3 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 16.1 | 0.3 | 1.4 | 20.4 | 590 |
| 4 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 17.7 | 0.3 | 1.5 | 22.2 | 690 |
| 5 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 19.6 | 0.3 | 1.6 | 24.3 | 830 |
| 6 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 21.5 | 0.3 | 1.6 | 26.2 | 910 |
| 7 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 21.5 | 0.3 | 1.6 | 26.2 | 970 |
| 8 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 23.5 | 0.3 | 1.7 | 28.4 | 1120 |
| 9 | 1.5 | 7 / 0.53 | 0.8 | 1.6 | 25.6 | 0.3 | 1.8 | 30.7 | 1280 |
| 10 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 28.2 | 0.3 | 1.9 | 33.5 | 1390 |
| 11 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 28.2 | 0.3 | 1.9 | 33.5 | 1440 |
| 12 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 29.2 | 0.3 | 1.9 | 34.5 | 1530 |
| 13 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 29.2 | 0.3 | 2.0 | 34.7 | 1600 |
| 14 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 29.2 | 0.3 | 2.0 | 34.7 | 1660 |
| 15 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 31.1 | 0.3 | 2.0 | 36.6 | 1780 |
| 16 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 31.1 | 0.3 | 2.0 | 36.6 | 1840 |
| 17 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 33.0 | 0.3 | 2.1 | 38.7 | 1980 |
| 18 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 33.0 | 0.3 | 2.1 | 38.7 | 2040 |
| 19 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 33.0 | 0.3 | 2.1 | 38.7 | 2090 |
| 20 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 34.7 | 0.3 | 2.2 | 40.6 | 2220 |

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED INDIVIDUAL AND OVERALL SCREENED FIRE RESISTANT AND FLAME RETARDANT INSTRUMENT CABLE

## TYPE F3 : CU/MICA/EPR/EVA/SWB/EVA INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single triad and multi-triad cables with copper conductor, mica tape, EPR insulated, individual and overall screened, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 250/450 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular stranded copper conductor, conforming to IEC 60228 or BS 6360 class 2.

2 **Fire proof layer**
Mica tape

3 **Insulation**
EPR ( Ethylene Propylene Rubber )

4 **Tripling**
Three insulated cores shall be uniformly twisted together to form a triad. Each triad is screened with aluminium/mylar tape, helically applied metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

5 **Triad identification**
Single triad : Red, white, black
Multi triads : Red, white, black ( Triads are identified by number ).

6 **Cabling**
The individually screened twisted triads are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

7 **Screening**
The assembled twisted triads are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

8 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

9 **Armour**
Galvanized steel wire shall be braided over the bedding.

10 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black. ( IS - Blue )

**SPECIFICATIONS:**

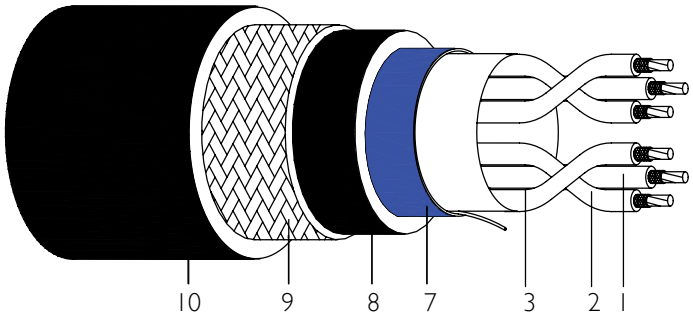
BS 6883 , BS 7917
IEC 60092
IEC 60331
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE F3 : CU/MICA/EPR/EVA/SWB/EVA INDIVIDUAL AND OVERALL SCREENED INSTRUMENT CABLE 250/450 V

| Number of triads | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.5 | 7 / 0.53 | 0.8 | 1.1 | 11.0 | 0.3 | 1.2 | 14.9 | 340 |
| 2 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 20.7 | 0.3 | 1.5 | 25.2 | 770 |
| 3 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 22.1 | 0.3 | 1.6 | 26.8 | 910 |
| 4 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 24.5 | 0.3 | 1.6 | 29.2 | 1080 |
| 5 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 27.1 | 0.3 | 1.7 | 32.0 | 1280 |
| 6 | 1.5 | 7 / 0.53 | 0.8 | 1.6 | 30.0 | 0.3 | 1.8 | 35.1 | 1460 |
| 7 | 1.5 | 7 / 0.53 | 0.8 | 1.6 | 30.0 | 0.3 | 1.8 | 35.1 | 1560 |
| 8 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 32.9 | 0.3 | 1.9 | 38.2 | 1800 |
| 9 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 35.6 | 0.3 | 1.9 | 40.9 | 2020 |
| 10 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 39.4 | 0.3 | 2.1 | 45.1 | 2300 |
| 11 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 39.4 | 0.3 | 2.1 | 45.1 | 2400 |
| 12 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 40.8 | 0.3 | 2.2 | 46.7 | 2500 |

# ETHYLENE PROPYLENE RUBBER INSULATED BRAIDED EVA SHEATHED OVERALL SCREENED FIRE RESISTANT AND FLAME RETARDANT INSTRUMENT CABLE

## TYPE F4 : CU/MICA/EPR/EVA/SWB/EVA OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single triad and multi-triad cables with copper conductor, mica tape, EPR insulated, overall screened, flame retardant low smoke zero halogen compound EVA bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound EVA sheathed. Cables are rated at 250/450 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular stranded copper conductor, conforming to IEC 60228 or BS 6360 class 2.

2 **Fire proof layer**
Mica tape

3 **Insulation**
EPR ( Ethylene Propylene Rubber )

4 **Tripling**
Three insulated cores shall be uniformly twisted together to form a triad.

5 **Triad identification**
Single triad : Red, white, black
Multi triads : Red, white, black ( Triads are identified by number ).

6 **Cabling**
Twisted triads are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

7 **Screening**
The assembled twisted triads are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 1.0 mm².

8 **Bedding**
Flame retardant low smoke zero halogen compound EVA, colour black.

9 **Armour**
Galvanized steel wire shall be braided over the bedding.

10 **Sheath**
Flame retardant low smoke zero halogen compound EVA, colour black. ( IS - Blue )

**SPECIFICATIONS:**

BS 6883 , BS 7917
IEC 60092
IEC 60331
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

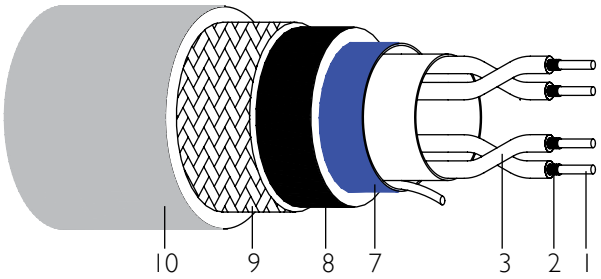
## TYPE F4 : CU/MICA/EPR/EVA/SWB/EVA OVERALL SCREENED INSTRUMENT CABLE

**250/450 V**

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 1.5 | 7 / 0.53 | 0.8 | 1.1 | 11.0 | 0.3 | 1.2 | 14.9 | 340 |
| 2 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 18.4 | 0.3 | 1.5 | 22.9 | 670 |
| 3 | 1.5 | 7 / 0.53 | 0.8 | 1.3 | 19.6 | 0.3 | 1.5 | 24.1 | 770 |
| 4 | 1.5 | 7 / 0.53 | 0.8 | 1.4 | 21.8 | 0.3 | 1.6 | 26.5 | 940 |
| 5 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 24.2 | 0.3 | 1.6 | 28.9 | 1100 |
| 6 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 26.6 | 0.3 | 1.7 | 31.5 | 1240 |
| 7 | 1.5 | 7 / 0.53 | 0.8 | 1.5 | 26.6 | 0.3 | 1.7 | 31.5 | 1330 |
| 8 | 1.5 | 7 / 0.53 | 0.8 | 1.6 | 29.2 | 0.3 | 1.8 | 34.3 | 1530 |
| 9 | 1.5 | 7 / 0.53 | 0.8 | 1.7 | 31.8 | 0.3 | 1.9 | 37.1 | 1750 |
| 10 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 35.0 | 0.3 | 2.0 | 40.5 | 1900 |
| 11 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 35.0 | 0.3 | 2.0 | 40.5 | 1980 |
| 12 | 1.5 | 7 / 0.53 | 0.8 | 1.8 | 36.2 | 0.3 | 2.0 | 41.7 | 2110 |
| 13 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 36.7 | 0.3 | 2.1 | 42.4 | 2240 |
| 14 | 1.5 | 7 / 0.53 | 0.8 | 1.9 | 36.7 | 0.3 | 2.1 | 42.4 | 2320 |
| 15 | 1.5 | 7 / 0.53 | 0.8 | 2.0 | 39.0 | 0.3 | 2.2 | 44.9 | 2510 |

# SILICON RUBBER INSULATED BRAIDED LSOH SHEATHED OVERALL SCREENED FIRE RESISTANT AND FLAME RETARDANT INSTRUMENT CABLE

## TYPE TEL-1 : CU/MICA/SiR/LSOH/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE




**DESCRIPTION**

Single pair and multi-pair cables with copper conductor, mica tape, Silicon Rubber insulated, overall screened, flame retardant low smoke zero halogen compound LSOH bedding, galvanised steel wire braiding and flame retardant low smoke zero halogen compound LSOH sheathed. Cables are rated at 100 V.

**CONSTRUCTION**

1 **Conductor**
Plain annealed circular solid copper conductor, conforming to IEC 60228 or BS 6360 class 1.

2 **Fire proof layer**
Mica tape

3 **Insulation**
SiR ( Silicon Rubber )

4 **Pairing**
Two insulated cores shall be uniformly twisted together to form a pair
Note : Two pair cables with overall screen shall have four cores laid in quad formation.

5 **Pair identification**
Colour code.

6 **Cabling**
Twisted pairs are laid up together, if necessary filled with non-hygroscopic material compatible with the insulation.

7 **Screening**
The assembled twisted pairs are overall screened with aluminium/mylar tape, helically applied with the metallic side down, in electrical contact with a tinned annealed copper drain wire of 0.5 mm².

8 **Bedding**
Flame retardant low smoke zero halogen compound LSOH, colour black.

9 **Armour**
Galvanized steel wire shall be braided over the bedding.

10 **Sheath**
Flame retardant low smoke zero halogen compound LSOH, colour grey.

**SPECIFICATIONS:**

IEC 60092, IEC 60502
IEC 60331, BS 6387
IEC 60332-3 Cat A
IEC 60754 ( HCl emission 0.5 % maximum by weight )
ASTM D 2863 ( Oxygen index greater than 30% )

## TYPE TEL - 1 : CU/MICA/SiR/LSOH/SWB/LSOH OVERALL SCREENED INSTRUMENT CABLE 100 V

| Number of pairs | Nominal cross-sectional area | Conductor strands | Nominal thickness of insulation | Nominal thickness of bedding | Approx. bedding diameter | Nominal diameter of steel wire | Nominal thickness of sheath | Approx. overall diameter | Approx. cable weight |
|---|---|---|---|---|---|---|---|---|---|
| | mm² | no. / mm | mm | mm | mm | mm | mm | mm | Kg / Km |
| 1 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 9.2 | 0.3 | 1.2 | 13.1 | 250 |
| 2 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 10.6 | 0.3 | 1.2 | 14.5 | 320 |
| 3 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 14.1 | 0.3 | 1.4 | 18.4 | 450 |
| 4 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 15.5 | 0.3 | 1.4 | 19.8 | 520 |
| 5 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 17.1 | 0.3 | 1.5 | 21.6 | 610 |
| 6 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 18.7 | 0.3 | 1.5 | 23.2 | 670 |
| 7 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 18.7 | 0.3 | 1.5 | 23.2 | 710 |
| 8 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 20.4 | 0.3 | 1.6 | 25.1 | 790 |
| 9 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 22.1 | 0.3 | 1.7 | 27.0 | 890 |
| 10 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 24.2 | 0.3 | 1.7 | 29.1 | 970 |
| 11 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 24.2 | 0.3 | 1.7 | 29.1 | 1010 |
| 12 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 25.0 | 0.3 | 1.8 | 30.1 | 1080 |
| 13 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 25.0 | 0.3 | 1.8 | 30.1 | 1110 |
| 14 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 25.0 | 0.3 | 1.8 | 30.1 | 1150 |
| 15 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 26.5 | 0.3 | 1.9 | 31.8 | 1230 |
| 16 | 0.5 | 1 / 0.8 | 1.0 | 1.0 | 26.5 | 0.3 | 1.9 | 31.8 | 1270 |
| 17 | 0.5 | 1 / 0.8 | 1.0 | 1.2 | 28.6 | 0.3 | 2.0 | 34.1 | 1400 |
| 18 | 0.5 | 1 / 0.8 | 1.0 | 1.2 | 28.6 | 0.3 | 2.0 | 34.1 | 1440 |
| 19 | 0.5 | 1 / 0.8 | 1.0 | 1.2 | 28.6 | 0.3 | 2.0 | 34.1 | 1480 |
| 20 | 0.5 | 1 / 0.8 | 1.0 | 1.2 | 30.1 | 0.3 | 2.0 | 35.6 | 1550 |

## PAIR IDENTIFICATION :

| Pair No. | a-wire | b-wire |
|---|---|---|
| 1 | Black | Blue |
| 2 | Black | Green |
| 3 | Blue | Green |
| 4 | Black | Brown |
| 5 | Blue | Brown |
| 6 | Green | Brown |
| 7 | Black | White |
| 8 | Blue | White |
| 9 | Green | White |
| 10 | Brown | White |

| Pair No. | a-wire | b-wire |
|---|---|---|
| 11 | Black | Red |
| 12 | Blue | Red |
| 13 | Green | Red |
| 14 | Brown | Red |
| 15 | White | Red |
| 16 | Black | Orange |
| 17 | Blue | Orange |
| 18 | Green | Orange |
| 19 | Brown | Orange |
| 20 | White | Orange |

Note : Two pair cables with overall screen shall have four cores laid in quad formation. Black, Blue, Green, Brown in clockwise rotation

# TECHNICAL INFORMATION

## RATING FACTORS FOR VARIOUS AMBIENT AIR TEMPERATURE

| Ambient temperature | 25°C | 30°C | 35°C | 40°C | 45°C | 50°C | 55°C | 60°C | 65°C | 70°C | 75°C | 80°C |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Rating factors | 1.20 | 1.15 | 1.10 | 1.05 | 1.00 | 0.94 | 0.88 | 0.82 | 0.74 | 0.67 | 0.58 | 0.47 |

## ELECTRICAL CHARACTERISTICS FOR POWER AND CONTROL CABLES

| Conductor size | Resistance ( R ) | | Short circuit rating at 1 second | Reactance ( X ) at 50Hz | | Inductance at 50Hz | Impedance at 50Hz |
|---|---|---|---|---|---|---|---|
| | at 20°C ( DC ) | at 90°C ( AC ) | | Single core * | Multi-cores | Multi-cores | Multi-cores |
| (mm²) | (Ohm/km) | (Ohm/km) | ( kA ) | (Ohm/km) | (Ohm/km) | (mH/km) | (Ohm/km) |
| 1.5 | 12.1 | 15.4 | 0.21 | 0.182 | 0.103 | 0.329 | |
| 2.5 | 7.41 | 9.45 | 0.36 | 0.169 | 0.097 | 0.309 | |
| 4 | 4.61 | 5.88 | 0.57 | 0.158 | 0.091 | 0.290 | |
| 6 | 3.08 | 3.93 | 0.86 | 0.148 | 0.087 | 0.277 | |
| 10 | 1.83 | 2.33 | 1.43 | 0.137 | 0.082 | 0.262 | |
| 16 | 1.15 | 1.47 | 2.29 | 0.129 | 0.081 | 0.254 | |
| 25 | 0.727 | 0.927 | 3.58 | 0.122 | 0.079 | 0.250 | |
| 35 | 0.524 | 0.668 | 5.01 | 0.116 | 0.077 | 0.248 | |
| 50 | 0.387 | 0.494 | 7.15 | 0.106 | 0.076 | 0.237 | Impedance for 2, 3 and 4 core cables is given by the formula $Z = \sqrt{R^2 + X^2}$ |
| 70 | 0.268 | 0.342 | 10.02 | 0.103 | 0.075 | 0.234 | |
| 95 | 0.193 | 0.247 | 13.59 | 0.098 | 0.073 | 0.228 | |
| 120 | 0.153 | 0.197 | 17.17 | 0.096 | 0.073 | 0.227 | |
| 150 | 0.124 | 0.160 | 21.46 | 0.096 | 0.073 | 0.227 | |
| 185 | 0.0991 | 0.128 | 26.47 | 0.096 | 0.073 | 0.227 | |
| 240 | 0.0754 | 0.0989 | 34.34 | 0.092 | 0.072 | 0.224 | |
| 300 | 0.0601 | 0.0802 | 42.92 | 0.090 | 0.072 | 0.223 | |
| 400 | 0.0470 | 0.0640 | 57.23 | 0.090 | 0.069 | 0.221 | |
| 500 | 0.0366 | 0.0515 | 71.54 | 0.089 | - | - | |
| 630 | 0.0283 | 0.0420 | 90.14 | 0.086 | - | - | |
| 800 | 0.0221 | 0.0363 | 114.5 | 0.086 | - | - | |
| 1000 | 0.0176 | 0.0316 | 143.1 | 0.084 | - | - | |

Note: * Reactance for single core cables given at trefoil formation.

## ELECTRICAL CHARACTERISTICS FOR INSTRUMENTATION CABLES

| Conductor size | Resistance at 20°C | Capacitance ( PE )* | | Capacitance ( EPR ) | | L/R ratio |
|---|---|---|---|---|---|---|
| | | Overall Screen # | Individual Screen | Overall Screen # | Individual Screen | |
| (mm²) | (Ohm/km) | (nF/km) | (nF/km) | (nF/km) | (nF/km) | (mH/Ohm) |
| 0.5 | 36.8 | 75 | 115 | 100 | 120 | 25 |
| 0.75 | 25.0 | 75 | 115 | 100 | 120 | 25 |
| 1.0 | 18.4 | 75 | 115 | 100 | 120 | 25 |
| 1.5 | 12.3 | 85 | 120 | 110 | 125 | 40 |
| 2.5 | 7.56 | 105 | 140 | 125 | 145 | 60 |

Note: # Except for one-pair and two-pair
* To BS 5308

## MINIMUM BENDING RADIUS

| Type of cable | | Voltage | Minimum bending radius |
|---|---|---|---|
| Power Cables | Single core | 6/10 (12) kV | 15 x D |
| | Multi-cores | 6/10 (12) kV | 12 x D |
| Power & Control Cables | | 0.6/1 (1.2) kV | 10 x D |
| Instruments Cables | | 300/500V and below | 10 x D |

D : Overall diameter of cable

# PUBLICATIONS REFERRED TO

| | | |
|---|---|---|
| IEC | 60092 | Electrical Installation In Ships. |
| IEC | 60092-350 | Shipboard Power Cables - General Construction & Test Requirements. |
| IEC | 60092-351 | Insulation Materials for Shipboard and Mobile and Fixed Offshore Units, Power, Telecommunication, and Control Data Cable. |
| IEC | 60092-353 | Single and Multicore Non - Radial Field Power Cables With Extruded Solid Insulation For Rated Voltages 1 kV & 3 kV. |
| IEC | 60092-354 | Single and Three Core Power Cables With Extruded Solid Insulation For Rated Voltages 6 kV, 10 kV and 15 kV. |
| IEC | 60092-359 | Sheathing Materials For Shipboard Power and Telecommunication Cables. |
| IEC | 60092-375 | General Instrumentation, Control and Communication Cables. |
| IEC | 60092-376 | Cables For Control and Instrumentation Circuits 150/250 V (300 V). |
| IEC | 60228 | Conductors Of Insulated Cables. |
| IEC | 60331 | Test For Electric Cables Under Fire Conditions. |
| IEC | 60332 | Test On Electric Cables Under Fire Conditions. |
| IEC | 60502-1 | Power Cables With Extruded Insulation And Their Accessories For Rated Voltages From 1 kV ( Um = 1.2 kV ) Up To 30 kV ( Um = 36 kV ). |
| IEC | 60754-2 | Test and Gases Evolved During Combustion Of Materials From Cables. |
| IEC | 61034 | Measurement Of Smoke Density Of Cables Burning Under Defined Conditions. |
| BS | 5308-1 | Instrumentation Cables - Specification For Polyethylene Insulated Cables. |
| BS | 5308-2 | Instrumentation Cables - Specification For PVC Insulated Cables. |
| BS | 6360 | Conductors In Insulated Cables and Cords. |
| BS | 6387 | Performance requirements For Cables Required To Maintain Circuit Integrity Under Fire Conditions. |
| BS | 6883 | Elastomer Insulated Cables For Fixed Wiring In Ships And On Mobile And Fixed Offshore Units - Requirements And Test Methods. |
| BS | 7917 | Elastomer Insulated Fire Resistant (Limited Circuit Integrity) Cables For Fixed Wiring In Ships and On Mobile and Fixed Offshore Units - Requirements and Test Methods. |
| BS EN | 50288-7 | Multi-element metallic cables used in analogue and digital communication and control Part 7 : Sectional specification for instrumentation and control cables |
| SS | 299 | Fire Resistant Cables. |

The manufacturer reserves the right to modify and vary the construction or specification of any of the products at their discretion and without prior notice. The information contained herein is in line with the appropriate standards and sound electrical practice. It is believed to be reliable, but as each application is unique and specific to requirements, thus manufacturer accepts no responsibility as to the suitability of any products for a particular use, or for any errors or omissions, unintentional or otherwise.

**Note:**

**Note:**

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UNIVERSAL CABLE (M) BERHAD
(Co. No. : 7042-D)


**ADMINISTRATIVE CENTRE & MANUFACTURING PLANT**

No. 33, Jalan Tiran, Kangkar Tebrau,
81100 Johor Bahru, Johor, Malaysia.
Tel • +607 355 3333
Fax • +607 355 5298
Email • info@ucable.com.my

**SHAH ALAM SALES OFFICE**

Unit 8.2, Level 8, Building A, Dataran PHB,
Saujana Resort, Seksyen U2, 40150 Shah Alam,
Selangor D.E., Malaysia.
Tel • +603 7845 6699
Fax • +603 7845 8323

**PLENTONG MANUFACTURING PLANT**

Lot 7650, Muklim Plentong,
81750 Masai, Johor, Malaysia.
Tel • +607 387 7377
Fax • +607 386 5889


www.**ucable**.com.my

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