POLYCAB

Connection Zindagi Ka

Automation is everywhere... so are we with our
Instrumentation, Control & Signal Cables

POLYCAB

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Company Profile

Polycab an ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 company is India's no. 1 Cables & Wires Company with a glorious track record of over four decades. Our manufacturing facilities at Halol (Vadodara), Daman, Nashik & Roorkee in India, addresses to the specific needs with state-of-the-art machinery and technology.

Polycab's turnover has crossed ₹ 5000 crores (US$ 800 million) in the fiscal year 2014-15 and is projected to cross ₹ 6000 crores (US$ 1 billion) in fiscal year 2015-2016.

Polycab derives its strength from its customers and those being in sectors like Utilities, Power Generation, Transmission & Distribution, Petroleum & Oil Refineries, OEMs, EPC contractors, Steel & Metal, Cement, Chemical, Atomic Energy, Nuclear Plants, as well as Government partners like BSNL, Railways and Private Telecom Operators like Reliance, Vodafone, Airtel, Aircel, Tata, Idea and many more.

Polycab offers a variety of services:

- *Commercially reasonable prices*
- *Reliable & consistent quality*
- *Product development as per market*
- *A target stocking policy*
- *Technical support for application*

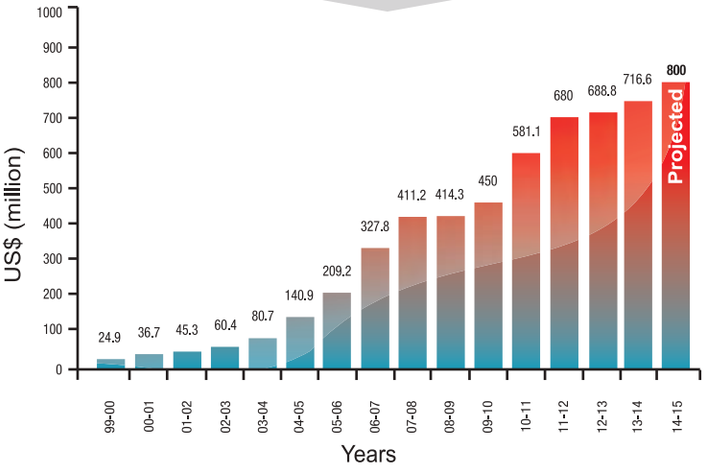
THINGS YOU DIDN'T KNOW ABOUT POLYCAB

Between its facilities in Daman, Halol (Vadodara), Nashik and Roorkee the company has 3.5 million square feet of manufacturing space.

Polycab manufactures enough cables each year to circumnavigate the earth three and a half times and enough wire to go to the moon and come back- four times.

Polycab has increased its turnover 100 times in sixteen years.

Over 300 Authorised distributors service its India needs and its overseas interests.



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Chairman's Message

The journey of over four decades would not have been as exciting and fulfilling without the unconditional support of all our customers & our sales partners, I would like to express our deep gratitude to you, as you have made Polycab one of the outstanding companies in our industry.

Despite our rapid growth and elevation to the leadership position in the industry, the simplicity in Polycab's flexibility and openness to new market trends and changing technology continue to be our driving force. The core values of, simplicity, team work, trust amongst people, customer focus and meeting commitments have given us a unique position and respectability among the Indian industry.

Gearing up for the future and to keep winning in tomorrow's world, we have a well recognized market presence with a strong product & portfolio, streamlined and efficient manufacturing capabilities to withstand the winds of change. But we will need to be even more proactive, agile and customer centric. We will need to anticipate the future and be ready with solutions, even before the customer asks for them.

There are many new challenges the cable industry is facing with new market opportunities and product developments. Automation in all sphere's of business processing is becoming very important and innovation in this segment is inevitable. Polycab is extending its product range in this segment to meet your growing needs and many new products for specific applications will be introduced soon.

Polycab's business model is evolving. We are enhancing our key internal operations to ensure a consistent and positive experience for our customers. Our business processes will begin and end with the customers. We have identified focus areas of growth over the next 5 years and beyond. Polycab aspires to be a Rs.10000+ crore company within the next 4 years.

We take this opportunity to thank you and convey our gratitude for the unabated support and trust you have always reposed on Polycab and encouraged it to move ahead confidently. We are confident that this will keep us ahead in our constant endeavour to be your preferred brand.

We hope to improve each day to serve you better.

HAPPY CABLING!!!

INDER T. JAISINGHANI
Chairman & Managing Director

“ A customer is the most important visitor on our premises.
He is not dependent on us. We are dependent on him.
He is not an interruption in our works. He is the purpose of it.
He is not an outsider in our business. He is part of it.

We are not doing him a favor by serving him he is doing us a favor by giving us an opportunity to do so.”
- Mahatma Gandhi

VISION

“ Our vision is to improve the quality of life and bring greater happiness to our customers. We will do so through reliable, safe sustainable and best in class products and services, while enhancing stake holder value continously.”

CORE VALUES

Trust | Teamwork | Customer Delight | Action
Commitment | Excellence | Sustainability

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THE COMPANY

POLYCAB, an ISO 9001: 2008 company is India's No. 1 Wire & Cable manufacturer with a proven track record of over four decades. The fastest growing company in the Indian Cable Industry with consistent growth, Polycab has crossed Rs. 5000 crore turnover (US$ 800 million) and is set to achieve Rs. 6000 crore turnover (US$ 1 billion) during the year 2015-16.

From a modest beginning with Wires and Cables, over three decades ago Polycab set up State of Art manufacturing facilities at Daman & Vadodara. In the manufacture of cables, a competitive and leading edge rests not so much in product innovation as in consistent quality and ready availability. Polycab's Daman & Vadodara Manufacturing Facilities on 250 acres of land was created to address these key market determinants. The manufacturing set up is sourced out from the world renowned Machinery and Technology suppliers. To maintain leadership, we continually keep expanding our manufacturing capabilities with constant upgradations to deliver superior products to our customers.

CUSTOMER SATISFACTION

In an on-going process to improve Customer Satisfaction, Polycab offers a variety of services:

- Commercially competitive prices.
- Reliable & consistent quality.
- Reliable & just in time delivery.
- Product development for a changing market.
- A targeted stocking policy.
- Technical Support for Applications/Projects.

CUSTOMER FOCUSED

POLYCAB derives its strengths from its Customers. The Growth of the latter is a prerequisite to the growth of the Company and hence customer satisfaction is its prime objective. Over the years sincere service and dedication of its Customers has earned the Company distinguished clientele & Consultants which includes leaders in Sectors like Utilities, Power Generation, Transmission & Distribution, Petroleum & Oil Refineries, OEM'S, EPC contractors, Steel & Metal, Cement, Chemical, Atomic Energy & Nuclear Power etc. We are both motivated and well-positioned to meet the changing needs of our customers as we have the resources to diversify and to enhance our product lines.

POLYCAB has highly experienced qualified and dedicated professionals with strong adherence to the quality management system. Polycab has offices all over the country and has its Valued Network of Distributors / Dealers/ Agents/ Resellers on Nationwide Basis. In every 5 sq. kms area in India you would find one Dealer / Stockist Dealing in Polycab Products. Polycab is continuously expanding its global presence in Europe, Middle East, and Asia.

Polycab has earned the trust and reputation in India and abroad by winning the customers' confidence. Several thousands of kilometers of Instrumentation Cables have been manufactured and are in service in various prestigious and signature projects in India and abroad.

The steady growth in automation of production processes in industry, especially distributed process control across large user sites like oil refining and petrochemical plants, the steel industry, power stations etc. necessitates the reliable transmission of electrical signals, process data and control information.

Today, in a continuous process plants like refinery, fertilizer, cement, steel etc. various parameters like temperature, pressure flow, level etc are converted in to electrical signals which are fed to control room. In control room these signals are analyzed compared and suitable commands are sent to the field to take corrective action. The control room has become the brain of the plant and instrumentation cables are the arteries.

Polycab's Instrumentation Cables are preferred choice by the Titans of Indian industry, leading EPC contractors, consultants and specifiers.

DETAILS MAKE DIFFERENCE

More than 4 decades of experience have enabled Polycab to develop a specific know how for each individual product line.

This is just not a catalog. It is what you have been looking for, a product guide for choosing the design you need for your project, plant or application. We wish it will allow consultants, manufacturers, OEM's, specifiers, engineers & contractors to save time when preparing specification or dealing with project requirement.

The application of combination design with national & international standards as available here should be a logical and standard type of instrumentation cable to meet general application needs.

Polycab's philosophy to exceed expectations begins by offering a comprehensive product portfolio from Wires to EHV cables. Polycab also offers other specialized cables like Foundation Fieldbus Cables (Profibus), Communication Cables, VFD cables, Silicon Insulated Cables and various other cables insulated with exceptional Polymer materials suitable for higher conductor temperatures.

For your any special types of application needs the product data and quotation are available on request.

OTHER AVAILABLE CATALOGS

- Flexible cables
- LT PVC power and control cables
- LT XLPE power and control cables
- HT cables upto 45 KV
- EHV cables upto 132 kv
- Fire survival cables
- Photovoltaic cables
- Special cables & wires for high rise buildings

Caution:

Instrumentation cables are not designed for use with power supplies and should not be connected to the mains power.

Summary of Instrumentation Cable Manufacturing Process and Raw Material used

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Conductor Raw Material

- Copper
- Metal Plated Conductor
  - Tin
  - Nickel
  - Silver

Individual Pairing / Laying up / Shielding (Screening)

- Aluminium Mylar + Tin Copper Drain wire
- Copper Wire Braid
- Copper Tape
- Copper Mylar tape + Tin Copper Drain Wire

Inner Sheath

- PE / PVC (HR/FR/FRLS)
- Rubber
- EVA
- LSOH

Armouring

- Steel Tape Armour
- Steel Wire Braid
- Galvanised steel armoured

Insulation

- PE/XLPE/PVC
- Halogen Free
- Cross Linked Halogen free
- EPR
- Silicon

Laying up / Overall Taping / Shielding (Screening)

- Aluminium Mylar + Tin Copper Drain wire
- Copper Wire Braid
- Copper Tape
- Copper Mylar + Tin Copper Drain wire

Metallic Barrier (optional)

- Lead Alloy Sheath
- Polyamide Sheatth

Outer Sheath

- PE/ HDPE
- PVC (HR/FR/FRLS)
- LSOH
- Rubber
- EVA

CONDUCTOR:

The metallic part of the cable which conducts the electricity is called conductor. In case of instrumentation cable it is invariably of copper as

a) It has got better conductivity (Next to silver)

b) It is free from oxide film in normal atmosphere.

c) It is ductile and does not easily break when bent sharply. It can be drawn in to fine wires (45swg)

d) It can be soldered easily

Copper has got affinity for sulphur and hence where sulphur is present it should be protected by tinning. All regular rubber cable has sulphur added in rubber for vulcanization and hence tinned copper conductors are always used in rubber cable. In bigger sized cable a seperator tape is applied on bare copper conductor to prevent it from coming into contact with sulphur in rubber.

Conductor for high temperature rating i.e PTFE and FEP insulated cable is of silvered copper to protect the copper from oxidation at higher process and operating temperature (About 200C).

In case of compensating cable the conductor material depend upon its type. This is discussed in detail in section Themocouple Extension Cable & Compensating Cables.

CONDUCTOR CONSTRUCTION:

In general any one of the following conductor constructions is employed for conductor.

a) SOLID (Class 1): the conductor is made of one solid wire i.e for 1.50 sq.mm conductor there will be one Wire of 1.38 mm diameter and it is denoted as 1/1.38 mm

b) STRANDED (Class 2): The conductor is made of several wires (strands) laid up together. Here six strands are laid around one central strand. For 1.50 sq.mm conductor there will be 7 strands of 0.53 mm.dia.each and it is denoted as 7/0.53 mm

c) FLEXIBLE (class 5) : The conductor is made of several wires twisted together in one direction i.e for 1.50 sq.mm there will be 30 wires of 0.25 mm dia. each and it is denoted as 30/0.25 mm.

The relative merits of the above constructions are as under:

Construction	Bending Capacity	Crimping Of Lugs	Suitable For Termination
Solid	Poor	Not Recommended	Screw
Stranded	Good	Recommended	All Types
Bunched	Best	Recommended	All Types

INSULATION:

The coating over the conductor, which insulates it from other conductor and earth is called insulation and it must have

a) Good electrical properties
b) Better heat stability
c) Should not be affected by normal environmental conditions
d) Flexibility
e) Reasonable price

Considering the above the insulation material can be divided into 2 classes

1. Thermoplastic and
2. Thermoset (Cross Linked)

Thermoplastic Material:

These are the plastics which when heated their linear molecule chains drift apart and become soft and regain their original form on cooling. PVC, POLYETHYLENE, PROPYLENE and NEW generation of LSZH (Low smoke Zero Halogen) are thermoplastics materials and cannot be used at higher temperatures. They can be recycled number of times.

NYLON is polyolefine material and can be used for higher temperature as well tough applications.

Thermosetting Material:

These are plastics and rubber when initially heated, their linear molecule chains get interlinked and this is not reversible. Due to this they can be operated at higher temperature. VULCANIZED RUBBER, CROSSLINK POLYETHYLENE, SILICON RUBBER, OTHER RUBBERS SUCH AS EPR, EVA are thermosetting material and they cannot be recycled.

DIFFERENT TYPE OF INSULATING MATERIALS ARE MENTIONED BELOW :

Polyvinyl Chloride (PVC) Compound:

This is the most widely used Plastic due to its versatility. Unlike other plastics this cannot be used alone. It is required to be mixed with other ingredients like plasticizers, fillers, stabilizers, lubricants etc. to make it workable. By varying the ingredients and their proportions in the compound the end properties can be varied to a great extent to meet the specific requirements.

The normal PVC insulated cables are suitable for continuous 70°C operation. By changing the plasticizer and stabilizer we can have HR PVC which is suitable for continuous 85°C operation. Due to higher dielectric constant and hence higher mutual capacitance it is not suitable for operation above audio frequency i.e.20 kilohertz.

Low Density Polyethylene (LDPE):

This has got excellent electrical properties but is suitable for continuous 60 degree Celsius operation and hence it is not used in Power Cable. Due to its low dielectric constant it is widely used for telephone and radio frequency cable.

Cross Linked Polyethylene (XLPE):

Cross Linked Polyethylene meeting ICEA S-82-252 standards can withstand higher temperature of 90°C due to Crosslinking of ethylene chains and hence it is widely used for LT and HT power cables. XLPE capable of withstanding 105°C and 125°C conductor temperatures can also be offered.

Florinated Ethylene Propylene (FEP) and Polytetraflouroethylene (PTFE):

These are other plastics, which are used as insulating material for higher temp. application (200°C) They have not found wide application due to their prohibitive cost.

Ethylene Propylene Rubber (EPR)

Ethylene propylene rubber is a common synthetic rubber polymer used as an insulation in electrical wire and cable and control/instrumentation cables.

Because of its rubber-like characteristics, EPR is used in many highly flexible cables. Its dielectric strength is good but not as high as that of PE or XLPE

EPR is abrasion resistant and is suitable for use at temperatures down to –60°C. It is fairly flame retardant and can be made even more flame retardant by careful formulation. EPR's high-temperature characteristics are very good. Some formulations can withstand continuous temperatures as high as 150°C.

Silicone

Silicone is a soft, rubbery insulation that has a temperature range from –80°C to 200°C. It has excellent electrical properties plus ozone resistance, low moisture absorption, weather resistance, and radiation resistance. It typically has low mechanical strength and poor scuff resistance.

SCREENING

Two individual conductors are uniformly twisted to form pairs which are then assembled. The paired conductors may be

1. Unscreened
2. Individually and overall screened (shielded)
3. Overall Screened (Shielded)

Screens (Shields) are often used in Instrumentation and signal cables to prevent or decrease possible interference/ noise in cables that can be caused by following reasons:

1. Cross-talk from adjacent pairs or triads
2. Interference induced by external source such as electrical equipment's machineries and powerlines

Screens are normally as under:

- Aluminum/ polyester tape with a tinned copper drain wire, the most common construction

- Copper/ polyester tape with a tinned copper drain wire, for a superior screen effect.

- Bare copper braid, for electromagnetic interference/ noise or when the cable is subject to movements.

- Tinned copper braid for electromagnetic interference in existence of corrosive atmosphere

Aluminum- Polyester or Copper- Polyester Shielding

Here the shielding is provided by wrapping of Aluminum or Copper foil bonded with Polyester film is also known as Mylar which is a trade name and hence sometimes it is called Alu-Mylar or Copper-Mylar shielding.

It is observed that in case of Electrostatic Interference the coverage is more important than conductance of the shield and hence thin Aluminum/copper foil (B.S. 5300 specifies a minimum thickness of 0.008 mm i.e. 8 Micron thickness for Aluminum/copper foil) is used for shielding for economic reasons. This foil has poor tensile strength and it breaks while wrapping. To provide mechanical strength Polyester film is laminated to Aluminum/copper foil. The Polyester film apart from providing strength also acts as additional insulation for shield isolation.

Sometimes clients insist on 50 to 75 Micron Aluminum/copper foils which may not offer any additional advantage but adds to the cost.

A tinned copper drain wire is provided in continuous contact with the Aluminum side of the tape all along the length of the cable. As the name suggests it drains off electrostatic interference. It helps to connect the Aluminum/copper polyester tape to earth at the termination. Moreover it takes care of any breakage in the tape in providing continuous earth around the circuit. The most common size of the drain wire is 0.5sq.mm stranded or solid (20AWG). Stranded construction is preferred as it does not protrude above the tape and chances of its breakage are less.

Generally a plain polyester tape of thickness 0.025 mm (25 Micron) is provided over the laid up cable element, over which the drain wire runs and above that Aluminum/ copper polyester tape is wrapped. The plain polyester tape keeps the drain wire always in contact with the Aluminum/copper foil.

Bare/ Tinned Copper Braid

Here the shield is provided in the form of wire mesh around the cable circuits. Fine gauged soft wire of plain copper/ tinned copper are woven around the circuit. The finer the mesh better is its effectiveness. Due to its low resistance it provides better screening against Electromagnetic Interference but as it is not fully covered it is less effective against Electrostatic Interference when compared to Alu-polyester shielding.

It is much costlier than Alu-polyester shielding and it is generally used in cable which are used for flexible and nonstatic applications. Apart from providing shielding it also offers mechanical protection to inside circuits.

We recommend PVC inner sheath below braiding instead of plain polyester tape as it offers better mechanical protection to inside conductor against the damage caused by the wires of the braid due to constant movement.

Screen/ Shield Application

Screens/ shields if applied to each individual pairs/ triples (triads) is known as individual screen/ shield. Screen/ shield applied on the bundle (after laying up of pairs/triads) of the cable is known as overall screened/ shield.

LAYING UP OF ELEMENTS:

The required number of cabling element (Shielded or Unshielded) or cores are stranded (laid up) concentrically in layers to form the laid up cable. Cable up to eight element will have one layer. For cable having more than eight elements there will be two or more layer and they are laid in opposite direction.

NYLON RIP CORD:

Sometimes a nylon thread of sufficient strength along the cable is provided under the inner sheath. It helps in removal of inner sheath without damaging the insulation at the time of termination or jointing. It is more useful in control and power cable where the inner sheath has a tendency to stick to the inside insulation due to the absence of any separator between them.

PROTECTION (OPTIONAL):

Lead sheath:

In addition to mechanical protections discussed above special protection can be considered for specific installations. Lead sheath is applied between inner sheath and outer sheath and is the best shield against destructive chemicals. However this is a costly solution and it increases weight of the cable and bending radius. However it is preferable to have armour to protect the lead sheath from crushing.

Polyamide

It is an alternative to Lead Sheath and is composed by a longitudinal overlapped aluminium copolymer coated tape bonded to HDPE jacket and additional polyamide/polypropylene sheath.

It has excellent protection against corrosion and humidity. This protection has a lower weight compared to lead sheath, cables have a smaller diameter, with a reduction of costs.

PVC INNER SHEATH:

Inner sheath of PVC either extruded / tape is provided over the overall shield as a bedding for the shield and armour to avoid common mode interference. Extruded sheath also adds to the circularity of the cable.

Taped inner sheath is not recommended as it is not inpermeable and in case of any puncture in the outer sheath the water reaches right upto shielding and corrodes it.

ARMOURING:

Armouring is provided over the inner sheath when cables have to be installed direct buried for mechanical protection. Its conductance is not as important in Instrumentation cable as it is in Power cable where it has to carry heavy earth return current in case of short circuit.

Steel armouring also provides protection against Electromagnetic interference due to its magnetic nature. It also provides protection to inside cable against Rodent attack which is quite common in tropical countries like India.

The following points must be considered while considering armouring:

- Required tensile load
- Minimum required bending radius
- Protection against rodent attack
- Protection against accidental/ external damage
- Expected pressure on cable during service

GSFA: Galvanised Steel Flat Armoured, is composed of flat wires of thickness of 0.80mm. Where diameter under armour is above 13.0 mm galvanised steel strip of size 4.0 mm X 0.80 mm is generally used. This type of armour is similar to SWA/ RWA.

SWA/RWA: Single Layer of Galvanised Steel wires with diameters according to relevant standards is applied. This type of armour normally assures a very good mechanical protection and tensile strength. Generally galvanised mild steel wires of 0.90 mm diameter are used for armouring in cable where diameter under armour is 13.0 mm or less.

GSWB: Galvanised Steel Wire Braid in the form of wire mesh around the cable is applied. It assures a good mechanical resistance and lower bending radius compared to other types of armour. This type of braided armouring is preferred when there is movement or vibration. For special application it is also possible to use stainless steel or tinned copper wires.

GSTA: Galvanised Steel Tape Armoured, comprises of 2 tapes with overlapped edge. The thickness of the tape is to be designed according to cable diameter. It grants a coverage of more than 100%. It has very good crush resistance but has fair tensile strength.

OUTER SHEATH:

The coating on the armouring is known as outer sheath. Many compounds can be used as sheath material. Different grades are available to meet specific working conditions. The following factors have to be evaluated to decide the outer sheath material:

- Better abrasion resistance
- Type of installation – outdoor/ indoor, direct buried..
- Possible presence of humidity, oil, chemicals etc
- Behavior in case of fire (Fire Retardant, Fire Resistance, emission of gases and smoke)
- Range of temperature
- Better weatherproof properties. It must be stable against ultraviolet rays in case of exposure to sun.
- Cost

Considering the above the most acceptable material for outer sheath is PVC compound. It has good fire resistance due to its chlorine content. It burns when the flame is applied but fire gets extinguished immediately on removal of flame.

Fire resistance of plastics is expressed by their Oxygen Index. Oxygen Index indicates the percentage of Oxygen required in air, so that the plastic will burn like a candle at room temperature. The Oxygen Index of normal PVC used in cable is 25% while that of Polyethylene is 19%. Oxygen Index decreases with the rise in temperature and at a particular temperature it will drop to 20% and will burn like a candle. This temperature in degree celsius is known as temperature Index. Temperature Index of PVC in cable is 250C.

Over the year the size of petrochemical, chemical and Power plant has increased tremendously. Moreover the automation has also increased. As a result now many cable are bunched in the cable shafts and on the cable trays. In case of a fire in these cable, the fire become self-sustaining. Moreover due to burning of PVC a dense corrosive smoke is emitted which makes firefighting difficult due to poor visibility and toxic nature of the smoke. The HCL content of smoke not only damages other nearby costly equipment but also penetrates the RCC structure and corrodes its steel reinforcement due to this there is an extensive damage to the human life and property.

To overcome these deficiencies of PVC sheath, FR (Fire Retardant) PVC compound having a minimum Oxygen Index of 29% was developed, by adding Antimony Trioxide at compounding stage. FR PVC is preferred in Petroleum and Petro Chemical Plant which are open to the sky. FRLS (Fire Retardant Low Smoke) PVC compound is a further development where Aluminium Trihydrate (ATH) and some chemical are added at compounding stage to increase the Fire Resistance of the PVC and to decrease the smoke emission and toxicity of smoke. But again this is a PVC compound and hence toxic black smoke cannot be eliminated completely.

Zero Halogen Fire Retardant (ZHFR) Compound:

As discussed above, PVC has got better fire resistance due to its chlorine (Halogen) Content but it creates other problem during fire. To overcome these deficiencies ZHFR compounds were developed. Here Polyethylene or Ethylene Vinyl Acetate (EVA) plastics which are having zero halogen are imparted fire resistance properties by compounding them with certain chemicals. These materials when burn, emit little nontoxic smoke. This is the most preferred sheathing compound for underground Metros, Stations, Airports, Theatres, and Hospitals etc where human density is more.

Polyethylene Outersheath:

Due to poor abrasion and fire resistance Polyethylene sheaths are generally not used. Moreover minimum 2.5% carbon black content is required in Polyethylene to prevent its degradation due to ultra violet rays when exposed to sunlight. It is mainly used where better chemical and water resistance are required.

Nylon & Polyurethene Sheaths:

These plastics have better abrasion resistance and are used when there are specific requirement.

Colour of Outersheath:

By default it is black as it imparts weatherproof properties. In case of cable used for intrinsically safe systems blue sheath is provided. Sometimes the clients specify Grey or Red sheath to differentiate the instrumentation cable from the normal cables.

The signals are in millivolts and milliamperes and hence they must be protected by suitably designed Instrumentation Cables to screen off any outside interference. Any distortion of the signals will lead to malfunctioning of the system. A noise free signal is important to avoid mistakes.

The interference which is also called noise can be due to:

- External source like nearby power lines, big motors, generators etc.
- Internal source like voltage or current in the other circuit of the same multi-pair cable.

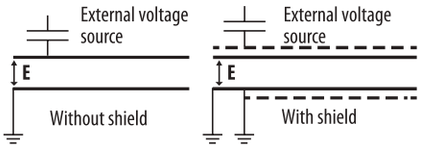
There are four basic types of interference which affect process instruments. They are:

1. ELECTRO STATIC
2. ELECTRO MAGNETIC
3. COMMON MODE
4. CROSS TALK

ELECTRO STATIC

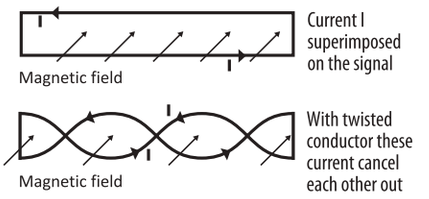
Any voltage source radiates electric field and this field will induce emf in the circuit which is coactively coupled to the voltage source. The most effective way to protect the circuit to place the circuit inside a total coverage shield, which is earthed.

The best shielding is provided by wrapping Aluminium foil bonded with polyester around the cable as this provides 100% coverage. Moreover the electrical interference induce very small currents and hence the conductance of the thin aluminium foil is sufficient.



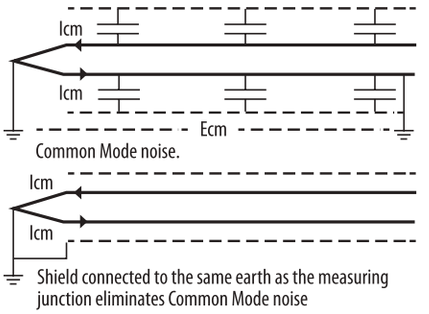
ELECTRO MAGNETIC

Generally low frequency electromagnetic field due to power cables, motors, etc. can induce EMF into the instrumentation cable. The twisting of conductors provides a good magnetic noise reduction. Other reductions are given by steel conduit, armours (high inductance material). In some particular cases low resisting screen (i.e. copper braids, copper tapes) may be necessary.



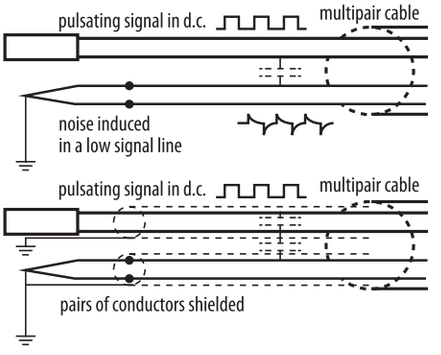
COMMON MODE

Different ground potential at different locations in a process plant cause common mode as it will give rise to a current in the shield which will affect the signal. To avoid this, ground the shield at one end only. This problem is more prominent in thermocouple extension leads (compensating Cables). For rapid response grounded thermocouples are used. The junction of the thermocouple is connected physically and electrically to the thermowell wall in which it is installed. In case of multiplier compensating cable for use with grounded thermocouples, each pair should be individually shielded and grounded at corresponding thermowell. Moreover all the shields must be isolated from each other.



CROSS TALK

This occurs with AC instrument signals, especially pulse type signals when more than one circuit is carried in the same cable. In case of multipair cables, the signal in a circuit gets coupled to a second circuit super imposing interference (noise) on a circuit. One way to combat this is to use pairs with staggered lay lengths in the same multipair cables i.e. the lay lengths of two nearby pairs are different. The best way to eliminate this is to use individually shielded pairs in multipair cable. Moreover these shields must be isolated from each other. The individual pair shield protects the pair from noise picked up from the adjacent pairs, as well as reduces the noise radiated by the pair it surrounds.



Electrical Properties at 20° C

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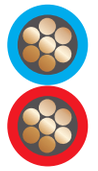
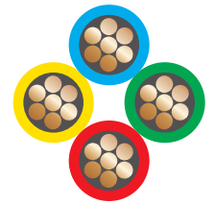
ELECTRICAL PROPERTIES FOR MULTICORE / SINGLE & MULTI PAIR

	Unit	Conductor size				
		0.5 mm²	0.75 mm²	1.0 mm²	1.5 mm²	2.5 mm²
INSULATION RESISTANCE						
a) PVC Insulated	MΩ/km	10	10	10	10	10
b) PE Insulated	MΩ/km	1000	1000	1000	1000	1000
c) XLPE Insulated	MΩ/km	1000	1000	1000	1000	1000
MUTUAL CAPACITANCE AT 1000 HZ						
a) PVC Insulated	nf/km	<250	<250	<250	<250	<250
b) PE Insulated	nf/km	<150	<150	<150	<150	<150
c) XLPE Insulated	nf/km	<150	<150	<150	<150	<150
L/R ratio	(L/R) µH/Ω	<25	<25	<25	<40	<60
TEST VOLTAGE						
Core / Core	kV	2kVac for 1 min				
Core / Screen	kV	1kVac for 1 min				
Rated Voltage	V	500	500	500	500	500

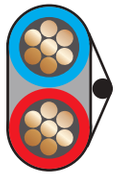
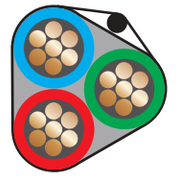
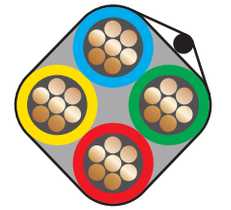
CONDUCTOR RESISTANCE

SIZE	MULTICORE /SINGLE PAIR/SINGLE TRIAD				MULTI PAIR/MULTI TRIAD			
	CLASS 1 & CLASS 2		CLASS 5 & CLASS 6		CLASS 1 & CLASS 2		CLASS 5 & CLASS 6	
	PLAIN	TINNED	PLAIN	TINNED	PLAIN	TINNED	PLAIN	TINNED
0.5	36	36.7	39	40.1	36.7	37.4	39.78	40.9
0.75	24.5	24.8	26	26.7	25	25.3	26.52	27.23
1	18.1	18.2	19.5	20	18.5	18.6	19.89	20.4
1.5	12.1	12.2	13.3	13.7	12.3	12.4	13.56	13.97
2.5	7.41	7.56	7.98	8.21	7.56	7.71	8.14	8.37

CORE	PAIR	TRIAD	QUAD
			
Insulated conductor is known as core	Two cores twisted to form a pair	Three cores twisted to form a Triad	Four cores twisted to form a Quad

INDIVIDUAL SHIELDING OF ELEMENT:

In case where individual shielding is required, the above element are wrapped first with Plain polyester, then the drain wire is laid parallel, over it Aluminum- polyester tape is applied with Aluminum side touching the drain wire. Above this a plain polyester tape is applied for shield isolation from other shields.

SHIELDED PAIR 	SHIELDED TRIAD 	SHIELDED QUAD 

Core and Pair Construction

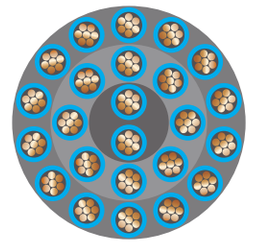
There is a confusion in specifying the cable required. If you ask for 24 Core X 1.50 sq.mm cable, we take 2 cores and twist them in one direction, above that 8 cores are laid in opposite direction and above that 14 cores are laid and it looks as drawing (a).

If you specify 12 Pair cable, first we take 2 cores and twist them to form a pair, 3 such pairs are again laid up, above that 9 such pairs are laid up to form a 12 pair cable and it look as drawing (b).

The diameter of multi paired cable is always more than that of multicore core cable having the same number of insulated cores and hence multi pair construction is always costlier.

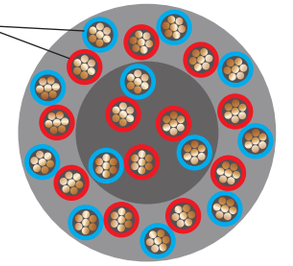
NOTE: One Pair and Two Core cables are generally the same.

Drawing (a)
24 Core
Cable



Pair

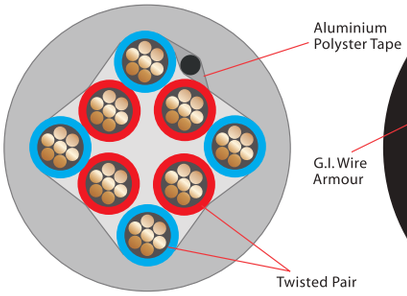
Drawing (b)
12 Pair
Cable



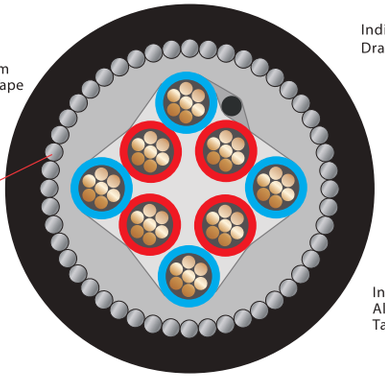
Typical Cross Sectional Drawing of Instrumentation Cables

POLYCAB
Connection Zindagi Ka

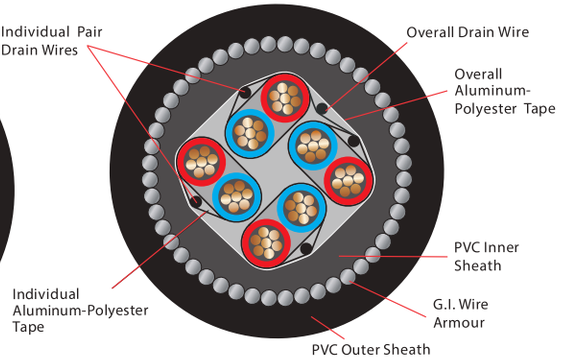
4 Pair Overall Shielded Unarmoured



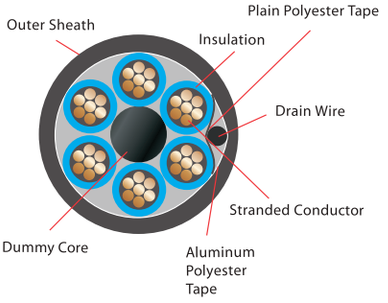
4 Pair Overall Shielded round Armoured Cable



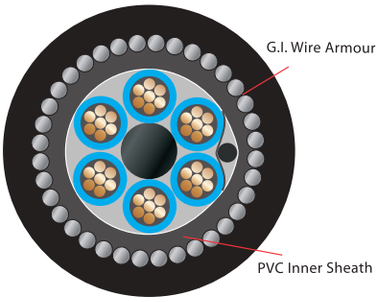
4 Pair Individual & Overall Shielded round Armoured Cable



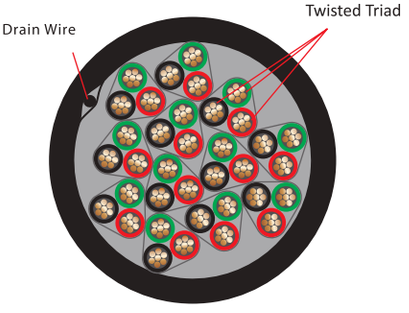
6 Core Overall Shielded Unarmoured



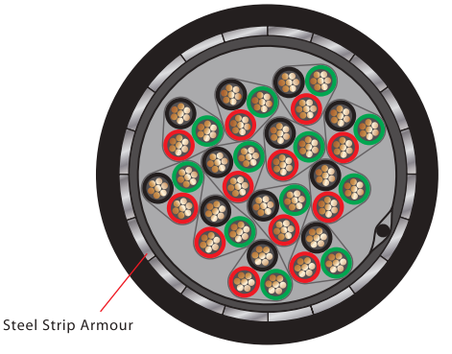
6 Core Overall Shielded Armoured



12 Triad Overall Shielded Unarmoured Cable



12 Triad Overall Shielded Strip Armoured Cable



Polycab Instrumentation cable is manufactured according to Indian & Various International Standards. Cable Constructions and properties can be based on following standards:

Description	Indian standard	VDE	BS	IEC
Conductor	IS 8130	0295	EN60228	60228
Insulation	IS 1554/7098 Part 1		EN50290	
Shielding			BS 50288	
Inner & Outer Sheath	IS 1554/7098 Part 1		EN50290	
Armour	IS 1554/7098 Part 1		BS 50288	

All the instrumentation cable at Polycab is manufactured in Quality Assurance System Compliant with ISO 9001.
The cable covered by the present catalogue comply with the regulation and standards consistent with IS, BS & IEC standards.

GLOSSARY:

IS- Indian Standards published by Bureau of Indian Standard (BIS)

VDE – Verband Der Elektrotechnik (Germany)

BS – British Standards

IEC – International Electrotechnical Commission

American Wire Gauge to mm^2 (Millimetre Sq.) Conversion Table

AWG TO MM^2 CONVERSION TABLE	
AWG/kcmil	mm^{2*}
20	0.52
18	0.82
16	1.31
14	2.08
12	3.31
10	5.26
8	8.36
6	13.3
4	21.14
2	33.6
1	42.4
1/0	53.5
2/0	67.4
3/0	85
4/0	107
250	127
300	152
350	177
400	203
450	228
500	253
600	304
750	380
800	405
1000	507

*Equivalent cross sectional area

MM^2 TO AWG CONVERSION TABLE		
MM^2	mm^{2*}	AWG/kcmil
0.5	0.52	20
0.75	0.82	18
1.5	1.31	16
2.5	2.08	14
2.5	3.31	12
4	3.31	12
6	5.26	10
10	8.36	8
16	13.3	6
25	21.2	4
35	33.6	2
35	42.4	1
50	53.5	1/0
70	67.4	2/0
95	85	3/0
95	107	4/0
120	107	4/0
120	127	250
150	152	300
185	177	350
185	203	400
240	228	450
240	253	500
300	304	600
400	380	750
400	405	800
500	507	1000

*Multiple choice of selection

300 VOLTS, MULTI CORE, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of cores	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm²		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.26	0.8	0.9	1.3	9.6	180	180	0.8	5.2	38	40	1000
0.5	3	0.26	0.8	0.9	1.3	9.9	195	195	0.8	5.5	45	47	1000
0.5	4	0.26	0.8	0.9	1.3	10.3	210	215	0.8	5.9	53	57	1000
0.5	5	0.26	0.9	0.9	1.3	11.0	235	240	0.9	6.6	63	67	1000
0.5	6	0.26	0.9	0.9	1.3	11.5	260	265	0.9	7.1	73	78	1000
0.5	7	0.26	0.9	0.9	1.3	11.5	260	270	0.9	7.1	76	82	1000
0.5	8	0.26	0.9	0.9	1.3	12.3	285	295	0.9	7.9	85	92	1000
0.5	10	0.26	0.9	0.9	1.4	13.4	330	340	0.9	8.8	100	110	1000
0.5	12	0.26	0.9	0.9	1.4	13.7	345	355	0.9	9.1	115	125	1000
0.5	16	0.26	1.0	0.9	1.4	14.8	410	425	1.0	10.2	150	165	1000
0.5	18	0.26	1.0	0.9	1.4	15.3	435	450	1.0	10.7	165	180	1000
0.5	19	0.26	1.0	0.9	1.4	15.3	440	455	1.0	10.7	170	185	1000
0.5	20	0.26	1.0	0.9	1.4	15.9	465	485	1.0	11.3	185	200	1000
0.5	24	0.26	1.0	0.9	1.4	17.0	510	540	1.0	12.4	205	230	1000
0.5	30	0.26	1.1	0.9	1.5	18.1	590	620	1.1	13.3	255	280	1000
0.5	37	0.26	1.1	0.9	1.5	19.1	660	690	1.1	14.3	300	335	1000
0.75	2	0.26	0.8	0.9	1.3	10.1	195	200	0.8	5.7	46	48	1000
0.75	3	0.26	0.8	0.9	1.3	10.4	210	215	0.8	6.0	55	58	1000
0.75	4	0.26	0.9	0.9	1.3	11.1	240	245	0.9	6.7	69	73	1000
0.75	5	0.26	0.9	0.9	1.3	11.6	265	270	0.9	7.2	79	84	1000
0.75	6	0.26	0.9	0.9	1.3	12.2	290	295	0.9	7.8	92	98	1000
0.75	7	0.26	0.9	0.9	1.3	12.2	290	300	0.9	7.8	96	105	1000
0.75	8	0.26	0.9	0.9	1.4	13.2	330	340	0.9	8.6	110	115	1000
0.75	10	0.26	1.0	0.9	1.4	14.5	390	400	1.0	9.9	135	145	1000
0.75	12	0.26	1.0	0.9	1.4	14.8	410	420	1.0	10.2	155	165	1000
0.75	16	0.26	1.0	0.9	1.4	15.8	475	490	1.0	11.2	195	215	1000
0.75	18	0.26	1.0	0.9	1.4	16.4	510	530	1.0	11.8	220	235	1000
0.75	19	0.26	1.0	0.9	1.4	16.4	510	530	1.0	11.8	220	245	1000
0.75	20	0.26	1.0	0.9	1.4	17.0	550	570	1.0	12.4	240	265	1000
0.75	24	0.26	1.1	0.9	1.5	18.7	630	650	1.1	13.9	280	305	1000
0.75	30	0.26	1.1	0.9	1.5	19.5	700	730	1.1	14.7	340	370	1000
0.75	37	0.26	1.1	0.9	1.5	20.6	800	840	1.1	15.8	405	445	1000
1.0	2	0.26	0.8	0.9	1.3	10.4	210	215	0.8	6.0	53	56	1000
1.0	3	0.26	0.9	0.9	1.3	10.9	240	245	0.9	6.5	68	71	1000
1.0	4	0.26	0.9	0.9	1.3	11.5	270	275	0.9	7.1	82	87	1000
1.0	5	0.26	0.9	0.9	1.3	12.1	290	295	0.9	7.7	94	100	1000
1.0	6	0.26	0.9	0.9	1.3	12.7	320	330	0.9	8.3	110	120	1000
1.0	7	0.26	0.9	0.9	1.3	12.7	325	335	0.9	8.3	115	125	1000
1.0	8	0.26	0.9	0.9	1.4	13.8	370	380	0.9	9.2	130	140	1000
1.0	10	0.26	1.0	0.9	1.4	15.2	435	445	1.0	10.6	165	175	1000
1.0	12	0.26	1.0	0.9	1.4	15.5	465	480	1.0	10.9	190	205	1000
1.0	16	0.26	1.0	0.9	1.4	16.7	540	560	1.0	12.1	240	260	1000
1.0	18	0.26	1.0	0.9	1.4	17.3	580	610	1.0	12.7	270	290	1000
1.0	19	0.26	1.0	0.9	1.4	17.3	590	610	1.0	12.7	275	300	1000
1.0	20	0.26	1.1	0.9	1.5	18.4	650	670	1.1	13.6	305	330	1000
1.0	24	0.26	1.1	0.9	1.5	19.8	720	750	1.1	15.0	350	380	1000
1.0	30	0.26	1.1	0.9	1.5	20.6	810	850	1.1	15.8	420	455	1000
1.0	37	0.26	1.2	0.9	1.5	22.1	940	980	1.2	17.3	510	560	1000
1.5	2	0.35	0.9	0.9	1.3	11.6	260	265	0.9	7.2	74	78	1000
1.5	3	0.35	0.9	0.9	1.3	12.0	285	290	0.9	7.6	92	97	1000
1.5	4	0.35	0.9	0.9	1.4	12.9	330	335	0.9	8.3	115	120	1000
1.5	5	0.35	0.9	0.9	1.4	13.6	360	370	0.9	9.0	130	140	1000
1.5	6	0.35	1.0	0.9	1.4	14.6	415	425	1.0	10.0	160	170	1000
1.5	7	0.35	1.0	0.9	1.4	14.6	420	435	1.0	10.0	170	180	1000
1.5	8	0.35	1.0	0.9	1.4	15.8	470	485	1.0	11.2	190	205	1000
1.5	10	0.35	1.1	0.9	1.5	17.6	560	580	1.1	12.8	235	255	1000
1.5	12	0.35	1.1	0.9	1.5	18.0	600	630	1.1	13.2	275	295	1000
1.5	16	0.35	1.1	0.9	1.5	19.4	710	740	1.1	14.6	350	380	1000
1.5	18	0.35	1.1	0.9	1.5	20.2	780	810	1.1	15.4	395	425	1000
1.5	19	0.35	1.1	0.9	1.5	20.2	790	820	1.1	15.4	400	435	1000
1.5	20	0.35	1.2	0.9	1.5	21.2	850	890	1.2	16.4	445	480	1000
1.5	24	0.35	1.2	1.25	1.6	23.9	1090	1140	1.2	18.2	510	550	1000
1.5	30	0.35	1.3	1.25	1.6	25.1	1250	1300	1.3	19.4	630	680	1000
1.5	37	0.35	1.3	1.25	1.7	26.9	1430	1500	1.3	21.0	750	820	1000

For Cables of sizes or cores not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300 VOLTS, SINGLE AND MULTI PAIR, STR .COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal diameter over armour	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm²		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.26	0.8	0.9	6.99	9.6	175	180	0.8	5.2	35	37	1000
0.5	2	0.26	0.9	0.9	9.37	12.0	255	260	0.9	7.6	60	64	1000
0.5	4	0.26	0.9	0.9	10.54	13.4	315	320	0.9	8.8	89	97	1000
0.5	5	0.26	1.0	0.9	11.52	14.4	355	365	1.0	9.8	110	120	1000
0.5	6	0.26	1.0	0.9	12.35	15.2	395	405	1.0	10.6	125	135	1000
0.5	8	0.26	1.0	0.9	13.61	16.5	450	465	1.0	11.9	155	170	1000
0.5	10	0.26	1.1	0.9	15.34	18.4	530	550	1.1	13.6	195	215	1000
0.5	12	0.26	1.1	0.9	15.79	18.8	580	600	1.1	14.0	220	245	1000
0.5	16	0.26	1.1	0.9	17.29	20.3	660	690	1.1	15.5	280	305	1000
0.5	18	0.26	1.1	0.9	18.13	21.2	710	740	1.1	16.4	305	340	1000
0.5	19	0.26	1.1	0.9	18.13	21.2	720	760	1.1	16.4	320	355	1000
0.5	20	0.26	1.2	0.9	19.25	22.5	790	820	1.2	17.5	345	380	1000
0.5	24	0.26	1.2	1.25	21.82	25.1	1020	1060	1.2	19.4	405	445	1000
0.5	30	0.26	1.3	1.25	23.16	26.4	1150	1200	1.3	20.7	490	550	1000
0.5	37	0.26	1.3	1.25	24.81	28.3	1310	1380	1.3	22.4	590	650	1000
0.75	1	0.26	0.8	0.9	7.41	10.1	190	195	0.8	5.7	42	44	1000
0.75	2	0.26	0.9	0.9	10.05	12.9	290	295	0.9	8.3	73	78	1000
0.75	4	0.26	1.0	0.9	11.57	14.4	365	375	1.0	9.8	120	125	1000
0.75	5	0.26	1.0	0.9	12.45	15.3	410	420	1.0	10.7	140	150	1000
0.75	6	0.26	1.0	0.9	13.39	16.2	455	465	1.0	11.6	160	175	1000
0.75	8	0.26	1.1	0.9	15.00	18.0	540	560	1.1	13.2	210	225	1000
0.75	10	0.26	1.1	0.9	16.72	19.8	620	650	1.1	15.0	255	275	1000
0.75	12	0.26	1.1	0.9	17.22	20.3	680	700	1.1	15.5	290	315	1000
0.75	16	0.26	1.2	0.9	19.11	22.4	810	850	1.2	17.4	375	410	1000
0.75	18	0.26	1.2	1.25	20.75	24.0	1000	1040	1.2	18.3	415	455	1000
0.75	19	0.26	1.2	1.25	20.75	24.0	1020	1060	1.2	18.3	435	475	1000
0.75	20	0.26	1.2	1.25	21.79	25.0	1070	1110	1.2	19.3	455	500	1000
0.75	24	0.26	1.3	1.25	24.08	27.5	1240	1290	1.3	21.6	550	600	1000
0.75	30	0.26	1.4	1.25	25.57	29.0	1410	1470	1.4	23.1	670	730	1000
0.75	37	0.26	1.4	1.25	27.42	30.9	1600	1680	1.4	25.0	800	880	1000
1.0	1	0.26	0.8	0.9	7.77	10.4	205	210	0.8	6.0	49	51	1000
1.0	2	0.26	0.9	0.9	10.65	13.5	315	320	0.9	8.9	86	91	1000
1.0	4	0.26	1.0	0.9	12.28	15.1	405	415	1.0	10.5	145	150	1000
1.0	5	0.26	1.0	0.9	13.24	16.1	455	465	1.0	11.5	170	180	1000
1.0	6	0.26	1.0	0.9	14.27	17.1	510	520	1.0	12.5	195	210	1000
1.0	8	0.26	1.1	0.9	16.02	19.1	610	630	1.1	14.3	255	275	1000
1.0	10	0.26	1.1	0.9	17.90	20.9	710	740	1.1	16.1	310	335	1000
1.0	12	0.26	1.2	0.9	18.65	21.7	780	810	1.2	16.9	365	395	1000
1.0	16	0.26	1.2	1.25	21.20	24.4	1060	1100	1.2	18.7	465	510	1000
1.0	18	0.26	1.2	1.25	22.23	25.5	1140	1190	1.2	19.8	520	560	1000
1.0	19	0.26	1.2	1.25	22.23	25.5	1170	1210	1.2	19.8	540	590	1000
1.0	20	0.26	1.3	1.25	23.56	26.8	1250	1290	1.3	21.1	580	630	1000
1.0	24	0.26	1.3	1.25	25.86	29.3	1430	1490	1.3	23.4	680	740	1000
1.0	30	0.26	1.4	1.25	27.46	30.9	1630	1700	1.4	25.0	840	910	1000
1.0	37	0.26	1.5	1.25	29.68	33.3	1900	1990	1.5	27.2	1020	1110	500/1000
1.5	1	0.35	0.9	0.9	8.97	11.6	255	260	0.9	7.2	67	71	1000
1.5	2	0.35	1.0	0.9	12.49	15.3	390	400	1.0	10.7	120	130	1000
1.5	4	0.35	1.1	0.9	14.47	17.5	530	540	1.1	12.7	205	220	1000
1.5	5	0.35	1.1	0.9	15.66	18.7	590	610	1.1	13.9	245	260	1000
1.5	6	0.35	1.1	0.9	16.93	20.0	660	680	1.1	15.2	285	305	1000
1.5	8	0.35	1.2	0.9	19.04	22.3	810	830	1.2	17.3	370	400	1000
1.5	10	0.35	1.3	1.25	22.28	25.5	1090	1120	1.3	19.8	460	495	1000
1.5	12	0.35	1.3	1.25	22.96	26.4	1200	1240	1.3	20.5	530	580	1000
1.5	16	0.35	1.4	1.25	25.45	28.9	1430	1490	1.4	23.0	690	750	1000
1.5	18	0.35	1.4	1.25	26.73	30.2	1540	1610	1.4	24.3	770	830	1000
1.5	19	0.35	1.4	1.25	26.73	30.2	1580	1650	1.4	24.3	800	870	1000
1.5	20	0.35	1.5	1.25	28.33	32.0	1690	1770	1.5	25.9	850	930	500/1000
1.5	24	0.35	1.5	1.25	31.18	34.8	1930	2020	1.5	28.7	1010	1100	500/1000
1.5	30	0.35	1.6	1.6	33.82	37.7	2440	2550	1.6	30.7	1240	1350	500
1.5	37	0.35	1.7	1.6	36.52	40.6	2820	2960	1.7	33.4	1510	1640	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300 VOLTS, SINGLE AND MULTI TRIAD, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.26	0.8	0.9	1.3	9.9	190	195	0.8	5.5	42	45	1000
0.5	2	0.26	0.9	0.9	1.3	12.8	285	290	0.9	8.4	76	81	1000
0.5	4	0.26	1.0	0.9	1.4	14.5	375	385	1.0	9.9	120	135	1000
0.5	5	0.26	1.0	0.9	1.4	15.4	415	430	1.0	10.8	145	160	1000
0.5	6	0.26	1.0	0.9	1.4	16.4	460	475	1.0	11.8	170	185	1000
0.5	8	0.26	1.1	0.9	1.5	18.2	560	580	1.1	13.4	220	240	1000
0.5	10	0.26	1.1	0.9	1.5	19.9	640	670	1.1	15.1	265	290	1000
0.5	12	0.26	1.1	0.9	1.5	20.4	690	720	1.1	15.6	300	335	1000
0.5	14	0.26	1.1	0.9	1.5	21.2	750	790	1.1	16.4	345	380	1000
0.5	16	0.26	1.2	0.9	1.6	22.6	840	880	1.2	17.6	390	435	1000
0.5	19	0.26	1.2	0.9	1.6	23.5	920	970	1.2	18.5	450	500	1000
0.5	20	0.26	1.2	1.25	1.6	25.3	1100	1160	1.2	19.6	475	530	1000
0.5	24	0.26	1.3	1.25	1.7	27.8	1280	1340	1.3	21.9	570	640	1000
0.5	30	0.26	1.3	1.25	1.7	29.1	1430	1510	1.3	23.2	690	770	1000
0.5	37	0.26	1.4	1.25	1.7	31.2	1640	1750	1.4	25.3	840	940	500/1000
0.75	1	0.26	0.8	0.9	1.3	10.4	210	210	0.8	6.0	52	55	1000
0.75	2	0.26	0.9	0.9	1.4	13.8	330	340	0.9	9.2	95	100	1000
0.75	4	0.26	1.0	0.9	1.4	15.5	430	440	1.0	10.9	160	170	1000
0.75	5	0.26	1.0	0.9	1.4	16.5	480	500	1.0	11.9	190	205	1000
0.75	6	0.26	1.1	0.9	1.5	18.0	560	580	1.1	13.2	225	245	1000
0.75	8	0.26	1.1	0.9	1.5	19.6	660	680	1.1	14.8	285	310	1000
0.75	10	0.26	1.2	0.9	1.5	21.7	770	810	1.2	16.9	355	390	1000
0.75	12	0.26	1.2	0.9	1.6	22.5	850	890	1.2	17.5	410	450	1000
0.75	14	0.26	1.2	1.25	1.6	24.1	1050	1100	1.2	18.4	470	510	1000
0.75	16	0.26	1.2	1.25	1.6	25.1	1150	1200	1.2	19.4	530	580	1000
0.75	19	0.26	1.3	1.25	1.6	26.4	1270	1330	1.3	20.7	620	680	1000
0.75	20	0.26	1.3	1.25	1.7	27.8	1360	1420	1.3	21.9	650	720	1000
0.75	24	0.26	1.4	1.25	1.7	30.4	1560	1640	1.4	24.5	780	860	1000
0.75	30	0.26	1.4	1.25	1.8	32.0	1780	1880	1.4	25.9	950	1040	500/1000
0.75	37	0.26	1.5	1.25	1.8	34.3	2060	2180	1.5	28.2	1150	1270	500/1000
1.0	1	0.26	0.9	0.9	1.3	10.9	235	240	0.9	6.5	64	68	1000
1.0	2	0.26	1.0	0.9	1.4	14.6	370	380	1.0	10.0	120	125	1000
1.0	4	0.26	1.0	0.9	1.4	16.3	485	500	1.0	11.7	195	205	1000
1.0	5	0.26	1.0	0.9	1.5	17.6	560	570	1.0	12.8	230	250	1000
1.0	6	0.26	1.1	0.9	1.5	18.9	630	650	1.1	14.1	280	300	1000
1.0	8	0.26	1.1	0.9	1.5	20.7	750	780	1.1	15.9	355	385	1000
1.0	10	0.26	1.2	0.9	1.6	23.2	900	940	1.2	18.2	440	480	1000
1.0	12	0.26	1.2	1.25	1.6	24.6	1110	1150	1.2	18.9	510	560	1000
1.0	14	0.26	1.3	1.25	1.6	25.7	1230	1280	1.3	20.0	590	640	1000
1.0	16	0.26	1.3	1.25	1.7	27.1	1350	1410	1.3	21.2	670	730	1000
1.0	19	0.26	1.3	1.25	1.7	28.2	1500	1560	1.3	22.3	780	840	1000
1.0	20	0.26	1.4	1.25	1.7	29.7	1590	1660	1.4	23.8	830	900	1000
1.0	24	0.26	1.4	1.25	1.8	32.5	1830	1920	1.4	26.4	980	1070	500/1000
1.0	30	0.26	1.5	1.25	1.8	34.3	2110	2220	1.5	28.2	1200	1310	500/1000
1.0	37	0.26	1.6	1.25	1.9	37.0	2470	2600	1.6	30.7	1470	1600	500
1.5	1	0.35	0.9	0.9	1.3	12.0	280	285	0.9	7.6	86	91	1000
1.5	2	0.35	1.0	0.9	1.4	16.5	455	465	1.0	11.9	160	170	1000
1.5	4	0.35	1.1	0.9	1.5	18.9	630	650	1.1	14.1	280	300	1000
1.5	5	0.35	1.1	0.9	1.5	20.3	720	750	1.1	15.5	335	365	1000
1.5	6	0.35	1.2	0.9	1.6	22.1	840	870	1.2	17.1	400	435	1000
1.5	8	0.35	1.3	1.25	1.6	25.2	1150	1190	1.3	19.5	520	570	1000
1.5	10	0.35	1.3	1.25	1.7	28.1	1350	1410	1.3	22.2	640	700	1000
1.5	12	0.35	1.4	1.25	1.7	29.1	1500	1560	1.4	23.2	760	820	1000
1.5	14	0.35	1.4	1.25	1.7	30.3	1640	1720	1.4	24.4	870	940	1000
1.5	16	0.35	1.5	1.25	1.8	32.1	1830	1910	1.5	26.0	990	1080	500/1000
1.5	19	0.35	1.5	1.25	1.8	33.5	2030	2140	1.5	27.4	1150	1250	500/1000
1.5	20	0.35	1.5	1.25	1.8	35.1	2140	2250	1.5	29.0	1210	1320	500/1000
1.5	24	0.35	1.7	1.6	2.0	39.8	2760	2890	1.7	32.6	1470	1600	500
1.5	30	0.35	1.7	1.6	2.0	41.8	3140	3310	1.7	34.6	1780	1950	500
1.5	37	0.35	1.8	1.6	2.1	45.1	3670	3880	1.8	37.7	2170	2380	500

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300 VOLTS, MULTI PAIR, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.26	0.9	0.9	1.4	13.2	300	305	0.9	8.6	79	83	1000
0.5	4	0.26	1.0	0.9	1.4	14.8	385	390	1.0	10.2	130	135	1000
0.5	5	0.26	1.0	0.9	1.4	15.7	430	440	1.0	11.1	155	165	1000
0.5	6	0.26	1.0	0.9	1.4	16.7	480	490	1.0	12.1	180	190	1000
0.5	8	0.26	1.1	0.9	1.5	18.6	580	590	1.1	13.8	230	245	1000
0.5	10	0.26	1.1	0.9	1.5	20.4	670	680	1.1	15.6	280	300	1000
0.5	12	0.26	1.2	0.9	1.5	21.1	730	750	1.2	16.3	330	350	1000
0.5	16	0.26	1.2	1.25	1.6	23.8	1000	1030	1.2	18.1	420	445	1000
0.5	18	0.26	1.3	1.25	1.6	24.9	1080	1120	1.3	19.2	470	500	1000
0.5	19	0.26	1.3	1.25	1.6	24.9	1100	1140	1.3	19.2	490	530	1000
0.5	20	0.26	1.3	1.25	1.7	26.2	1170	1210	1.3	20.3	520	550	1000
0.5	24	0.26	1.4	1.25	1.7	28.6	1340	1390	1.4	22.7	620	660	1000
0.5	30	0.26	1.4	1.25	1.7	30.0	1510	1570	1.4	24.1	750	800	1000
0.5	37	0.26	1.5	1.25	1.8	32.3	1760	1830	1.5	26.2	910	980	500/1000
0.75	2	0.26	1.0	0.9	1.4	14.1	345	350	1.0	9.5	98	100	1000
0.75	4	0.26	1.0	0.9	1.4	15.7	435	440	1.0	11.1	155	165	1000
0.75	5	0.26	1.0	0.9	1.5	16.9	495	500	1.0	12.1	185	195	1000
0.75	6	0.26	1.1	0.9	1.5	18.2	560	570	1.1	13.4	225	235	1000
0.75	8	0.26	1.1	0.9	1.5	19.8	660	680	1.1	15.0	280	300	1000
0.75	10	0.26	1.2	0.9	1.6	22.3	790	810	1.2	17.3	350	370	1000
0.75	12	0.26	1.2	1.25	1.6	23.5	970	1000	1.2	17.8	405	430	1000
0.75	16	0.26	1.3	1.25	1.7	25.9	1180	1210	1.3	20.0	520	560	1000
0.75	18	0.26	1.3	1.25	1.7	27.0	1260	1300	1.3	21.1	580	620	1000
0.75	19	0.26	1.3	1.25	1.7	27.0	1290	1330	1.3	21.1	610	650	1000
0.75	20	0.26	1.4	1.25	1.7	28.4	1370	1410	1.4	22.5	650	690	1000
0.75	24	0.26	1.4	1.25	1.8	31.1	1570	1630	1.4	25.0	770	820	1000
0.75	30	0.26	1.5	1.25	1.8	32.8	1800	1870	1.5	26.7	940	1000	500/1000
0.75	37	0.26	1.6	1.25	1.9	35.3	2090	2170	1.6	29.0	1140	1220	500/1000
1.0	2	0.26	1.0	0.9	1.4	14.8	365	370	1.0	10.2	110	115	1000
1.0	4	0.26	1.0	0.9	1.4	16.5	475	485	1.0	11.9	180	190	1000
1.0	5	0.26	1.1	0.9	1.5	18.0	560	570	1.1	13.2	225	235	1000
1.0	6	0.26	1.1	0.9	1.5	19.2	620	640	1.1	14.4	260	275	1000
1.0	8	0.26	1.2	0.9	1.5	21.1	740	760	1.2	16.3	340	360	1000
1.0	10	0.26	1.2	1.25	1.6	24.2	1010	1030	1.2	18.5	415	435	1000
1.0	12	0.26	1.3	1.25	1.6	25.1	1100	1130	1.3	19.4	485	510	1000
1.0	16	0.26	1.3	1.25	1.7	27.4	1320	1350	1.3	21.5	620	660	1000
1.0	18	0.26	1.4	1.25	1.7	28.8	1440	1480	1.4	22.9	700	740	1000
1.0	19	0.26	1.4	1.25	1.7	28.8	1470	1510	1.4	22.9	730	780	1000
1.0	20	0.26	1.4	1.25	1.7	30.1	1540	1590	1.4	24.2	770	820	1000
1.0	24	0.26	1.5	1.25	1.8	33.2	1790	1850	1.5	27.1	920	980	500/1000
1.0	30	0.26	1.5	1.25	1.8	34.8	2040	2110	1.5	28.7	1120	1190	500/1000
1.0	37	0.26	1.6	1.6	1.9	38.3	2590	2670	1.6	31.3	1360	1450	500
1.5	2	0.35	1.0	0.9	1.5	16.8	450	460	1.0	12.0	145	155	1000
1.5	4	0.35	1.1	0.9	1.5	19.0	600	620	1.1	14.2	245	260	1000
1.5	5	0.35	1.2	0.9	1.5	20.6	700	720	1.2	15.8	305	325	1000
1.5	6	0.35	1.2	1.25	1.6	22.9	910	930	1.2	17.2	355	375	1000
1.5	8	0.35	1.3	1.25	1.7	25.5	1100	1130	1.3	19.6	460	490	1000
1.5	10	0.35	1.4	1.25	1.7	28.4	1300	1330	1.4	22.5	570	610	1000
1.5	12	0.35	1.4	1.25	1.7	29.2	1410	1460	1.4	23.3	660	710	1000
1.5	16	0.35	1.5	1.25	1.8	32.2	1700	1760	1.5	26.1	860	920	500/1000
1.5	18	0.35	1.5	1.25	1.8	33.6	1840	1910	1.5	27.5	960	1030	500/1000
1.5	19	0.35	1.5	1.25	1.8	33.6	1880	1950	1.5	27.5	1000	1070	500/1000
1.5	20	0.35	1.6	1.6	1.9	36.4	2230	2300	1.6	29.4	1070	1140	500
1.5	24	0.35	1.7	1.6	2.0	40.0	2570	2660	1.7	32.8	1280	1370	500
1.5	30	0.35	1.8	1.6	2.0	42.2	2950	3060	1.8	35.0	1560	1680	500
1.5	37	0.35	1.9	1.6	2.1	45.5	3420	3560	1.9	38.1	1900	2040	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300 VOLTS, MULTI TRIAD, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.26	1.0	0.9	1.4	14.3	345	350	1.0	9.7	100	105	1000
0.5	4	0.26	1.0	0.9	1.4	15.8	445	455	1.0	11.2	160	170	1000
0.5	5	0.26	1.0	0.9	1.4	16.9	495	510	1.0	12.3	190	205	1000
0.5	6	0.26	1.1	0.9	1.5	18.4	570	580	1.1	13.6	230	245	1000
0.5	8	0.26	1.1	0.9	1.5	20.1	670	690	1.1	15.3	290	310	1000
0.5	10	0.26	1.2	0.9	1.6	22.5	800	830	1.2	17.5	360	390	1000
0.5	12	0.26	1.2	1.25	1.6	23.8	1000	1030	1.2	18.1	415	450	1000
0.5	14	0.26	1.3	1.25	1.6	24.9	1090	1130	1.3	19.2	480	520	1000
0.5	16	0.26	1.3	1.25	1.7	26.2	1190	1240	1.3	20.3	540	580	1000
0.5	19	0.26	1.3	1.25	1.7	27.3	1320	1370	1.3	21.4	620	680	1000
0.5	20	0.26	1.4	1.25	1.7	28.8	1400	1460	1.4	22.9	670	720	1000
0.5	24	0.26	1.4	1.25	1.8	31.4	1610	1680	1.4	25.3	790	850	500/1000
0.5	30	0.26	1.5	1.25	1.8	33.2	1830	1920	1.5	27.1	960	1050	500/1000
0.5	37	0.26	1.6	1.25	1.9	35.8	2130	2230	1.6	29.5	1170	1280	500/1000
0.75	2	0.26	1.0	0.9	1.4	15.1	385	390	1.0	10.5	120	125	1000
0.75	4	0.26	1.0	0.9	1.5	17.1	510	520	1.0	12.3	195	210	1000
0.75	5	0.26	1.1	0.9	1.5	18.4	580	600	1.1	13.6	245	260	1000
0.75	6	0.26	1.1	0.9	1.5	19.7	650	670	1.1	14.9	285	305	1000
0.75	8	0.26	1.2	0.9	1.6	22.0	800	820	1.2	17.0	370	395	1000
0.75	10	0.26	1.3	1.25	1.6	25.1	1080	1120	1.3	19.4	460	490	1000
0.75	12	0.26	1.3	1.25	1.7	26.0	1180	1220	1.3	20.1	530	570	1000
0.75	14	0.26	1.3	1.25	1.7	27.0	1290	1330	1.3	21.1	610	650	1000
0.75	16	0.26	1.4	1.25	1.7	28.4	1410	1460	1.4	22.5	690	740	1000
0.75	19	0.26	1.4	1.25	1.7	29.7	1560	1620	1.4	23.8	800	860	1000
0.75	20	0.26	1.4	1.25	1.8	31.3	1650	1720	1.4	25.2	840	910	500/1000
0.75	24	0.26	1.5	1.25	1.8	34.2	1920	2000	1.5	28.1	1010	1090	500/1000
0.75	30	0.26	1.6	1.6	1.9	37.0	2420	2520	1.6	30.0	1240	1330	500
0.75	37	0.26	1.7	1.6	2.0	39.9	2800	2920	1.7	32.7	1510	1630	500
1.0	2	0.26	1.0	0.9	1.4	15.8	425	430	1.0	11.2	140	150	1000
1.0	4	0.26	1.1	0.9	1.5	18.1	580	590	1.1	13.3	240	255	1000
1.0	5	0.26	1.1	0.9	1.5	19.4	650	670	1.1	14.6	290	305	1000
1.0	6	0.26	1.2	0.9	1.5	21.0	750	770	1.2	16.2	345	365	1000
1.0	8	0.26	1.2	1.25	1.6	23.9	1020	1050	1.2	18.2	440	470	1000
1.0	10	0.26	1.3	1.25	1.7	26.8	1230	1260	1.3	20.9	550	590	1000
1.0	12	0.26	1.3	1.25	1.7	27.5	1330	1370	1.3	21.6	640	680	1000
1.0	14	0.26	1.4	1.25	1.7	28.8	1470	1520	1.4	22.9	740	790	1000
1.0	16	0.26	1.4	1.25	1.7	30.1	1600	1660	1.4	24.2	830	890	1000
1.0	19	0.26	1.5	1.25	1.8	31.9	1810	1880	1.5	25.8	980	1050	500/1000
1.0	20	0.26	1.5	1.25	1.8	33.4	1910	1980	1.5	27.3	1030	1100	500/1000
1.0	24	0.26	1.6	1.6	1.9	37.5	2440	2520	1.6	30.5	1230	1320	500
1.0	30	0.26	1.7	1.6	2.0	39.7	2800	2910	1.7	32.5	1510	1620	500
1.0	37	0.26	1.7	1.6	2.0	42.4	3210	3340	1.7	35.2	1830	1960	500
1.5	2	0.35	1.1	0.9	1.5	18.3	530	540	1.1	13.5	195	205	1000
1.5	4	0.35	1.2	0.9	1.5	20.8	730	750	1.2	16.0	330	355	1000
1.5	5	0.35	1.2	1.25	1.6	23.2	970	1000	1.2	17.5	400	430	1000
1.5	6	0.35	1.3	1.25	1.6	25.1	1090	1120	1.3	19.4	480	510	1000
1.5	8	0.35	1.4	1.25	1.7	28.0	1330	1380	1.4	22.1	620	670	1000
1.5	10	0.35	1.5	1.25	1.8	31.4	1600	1650	1.5	25.3	780	830	500/1000
1.5	12	0.35	1.5	1.25	1.8	32.3	1750	1820	1.5	26.2	900	970	500/1000
1.5	14	0.35	1.5	1.25	1.8	33.7	1920	2000	1.5	27.6	1030	1110	500/1000
1.5	16	0.35	1.6	1.6	1.9	36.4	2330	2420	1.6	29.4	1170	1260	500
1.5	19	0.35	1.6	1.6	1.9	38.0	2590	2690	1.6	31.0	1360	1470	500
1.5	20	0.35	1.7	1.6	2.0	40.3	2770	2880	1.7	33.1	1450	1560	500
1.5	24	0.35	1.8	1.6	2.1	44.4	3210	3340	1.8	37.0	1740	1870	500
1.5	30	0.35	1.9	1.6	2.1	46.8	3700	3860	1.9	39.4	2130	2300	500
1.5	37	0.35	2.0	2.0	2.2	51.3	4650	4850	2.0	42.9	2590	2800	500

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

500 VOLTS, MULTI CORE, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of core	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	0.9	0.9	1.3	10.6	215	215	0.9	6.2	48	52	1000
0.5	3	0.44	0.9	0.9	1.3	11.0	230	235	0.9	6.6	56	61	1000
0.5	4	0.44	0.9	0.9	1.3	11.5	255	260	0.9	7.1	67	73	1000
0.5	5	0.44	0.9	0.9	1.3	12.1	270	280	0.9	7.7	75	83	1000
0.5	6	0.44	0.9	0.9	1.4	12.9	305	315	0.9	8.3	87	97	1000
0.5	7	0.44	0.9	0.9	1.4	12.9	305	315	0.9	8.3	89	100	1000
0.5	8	0.44	1.0	0.9	1.4	14.1	345	360	1.0	9.5	105	120	1000
0.5	10	0.44	1.0	0.9	1.4	15.2	395	410	1.0	10.6	125	140	1000
0.5	12	0.44	1.0	0.9	1.4	15.6	420	435	1.0	11.0	140	160	1000
0.5	16	0.44	1.0	0.9	1.4	16.7	480	500	1.0	12.1	180	205	1000
0.5	18	0.44	1.1	0.9	1.5	17.7	530	560	1.1	12.9	205	235	1000
0.5	19	0.44	1.1	0.9	1.5	17.7	530	560	1.1	12.9	205	235	1000
0.5	20	0.44	1.1	0.9	1.5	18.4	570	600	1.1	13.6	225	260	1000
0.5	24	0.44	1.1	0.9	1.5	19.8	630	670	1.1	15.0	255	295	1000
0.5	30	0.44	1.2	0.9	1.5	20.9	710	760	1.2	16.1	310	360	1000
0.5	37	0.44	1.2	0.9	1.6	22.3	800	860	1.2	17.3	370	425	1000
0.75	2	0.44	0.9	0.9	1.3	11.1	230	235	0.9	6.7	57	60	1000
0.75	3	0.44	0.9	0.9	1.3	11.4	245	255	0.9	7.0	67	72	1000
0.75	4	0.44	0.9	0.9	1.3	12.0	275	285	0.9	7.6	81	88	1000
0.75	5	0.44	0.9	0.9	1.4	12.9	305	315	0.9	8.3	91	100	1000
0.75	6	0.44	0.9	0.9	1.4	13.6	340	350	0.9	9.0	110	120	1000
0.75	7	0.44	0.9	0.9	1.4	13.6	340	355	0.9	9.0	110	125	1000
0.75	8	0.44	1.0	0.9	1.4	14.8	390	405	1.0	10.2	130	145	1000
0.75	10	0.44	1.0	0.9	1.4	16.1	440	460	1.0	11.5	155	175	1000
0.75	12	0.44	1.0	0.9	1.4	16.4	470	495	1.0	11.8	180	200	1000
0.75	16	0.44	1.1	0.9	1.5	18.1	570	590	1.1	13.3	235	260	1000
0.75	18	0.44	1.1	0.9	1.5	18.8	610	640	1.1	14.0	260	295	1000
0.75	19	0.44	1.1	0.9	1.5	18.8	610	650	1.1	14.0	265	300	1000
0.75	20	0.44	1.1	0.9	1.5	19.5	660	690	1.1	14.7	290	325	1000
0.75	24	0.44	1.2	0.9	1.6	21.5	750	800	1.2	16.5	335	375	1000
0.75	30	0.44	1.2	1.25	1.6	23.1	960	1010	1.2	17.4	400	455	1000
0.75	37	0.44	1.3	1.25	1.6	24.7	1090	1160	1.3	19.0	485	550	1000
1.0	2	0.44	0.9	0.9	1.3	11.4	245	250	0.9	7.0	65	69	1000
1.0	3	0.44	0.9	0.9	1.3	11.8	265	270	0.9	7.4	78	84	1000
1.0	4	0.44	0.9	0.9	1.3	12.5	295	305	0.9	8.1	94	100	1000
1.0	5	0.44	0.9	0.9	1.4	13.4	330	340	0.9	8.8	105	115	1000
1.0	6	0.44	1.0	0.9	1.4	14.3	380	390	1.0	9.7	130	145	1000
1.0	7	0.44	1.0	0.9	1.4	14.3	385	395	1.0	9.7	135	150	1000
1.0	8	0.44	1.0	0.9	1.4	15.4	425	440	1.0	10.8	155	170	1000
1.0	10	0.44	1.0	0.9	1.4	16.8	490	510	1.0	12.2	185	205	1000

500 VOLTS, MULTI CORE, STR.COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of core	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	12	0.44	1.1	0.9	1.5	17.6	540	570	1.1	12.8	220	245	1000
1.0	16	0.44	1.1	0.9	1.5	18.9	640	670	1.1	14.1	280	315	1000
1.0	18	0.44	1.1	0.9	1.5	19.7	690	720	1.1	14.9	315	350	1000
1.0	19	0.44	1.1	0.9	1.5	19.7	690	730	1.1	14.9	320	360	1000
1.0	20	0.44	1.1	0.9	1.5	20.5	740	780	1.1	15.7	350	390	1000
1.0	24	0.44	1.2	0.9	1.6	22.6	850	900	1.2	17.6	405	455	1000
1.0	30	0.44	1.2	1.25	1.6	24.3	1080	1140	1.2	18.6	485	550	1000
1.0	37	0.44	1.3	1.25	1.6	26.0	1230	1310	1.3	20.3	590	670	1000
1.5	2	0.44	0.9	0.9	1.3	12.0	275	280	0.9	7.6	79	84	1000
1.5	3	0.44	0.9	0.9	1.4	12.7	305	315	0.9	8.1	97	105	1000
1.5	4	0.44	0.9	0.9	1.4	13.4	345	355	0.9	8.8	120	130	1000
1.5	5	0.44	1.0	0.9	1.4	14.4	390	400	1.0	9.8	140	155	1000
1.5	6	0.44	1.0	0.9	1.4	15.2	435	450	1.0	10.6	170	180	1000
1.5	7	0.44	1.0	0.9	1.4	15.2	445	460	1.0	10.6	175	195	1000
1.5	8	0.44	1.0	0.9	1.4	16.5	495	510	1.0	11.9	200	220	1000
1.5	10	0.44	1.1	0.9	1.5	18.4	590	610	1.1	13.6	250	275	1000
1.5	12	0.44	1.1	0.9	1.5	18.8	640	670	1.1	14.0	285	315	1000
1.5	16	0.44	1.2	0.9	1.5	20.5	770	810	1.2	15.7	380	415	1000
1.5	18	0.44	1.2	0.9	1.6	21.6	840	880	1.2	16.6	420	465	1000
1.5	19	0.44	1.2	0.9	1.6	21.6	850	890	1.2	16.6	430	475	1000
1.5	20	0.44	1.2	1.25	1.6	23.2	1040	1080	1.2	17.5	470	520	1000
1.5	24	0.44	1.3	1.25	1.6	25.3	1170	1220	1.3	19.6	540	600	1000
1.5	30	0.44	1.3	1.25	1.7	26.6	1320	1390	1.3	20.7	660	730	1000
1.5	37	0.44	1.4	1.25	1.7	28.5	1520	1610	1.4	22.6	800	890	1000
2.5	2	0.53	1.0	0.9	1.4	13.6	345	350	1.0	9.0	115	120	1000
2.5	3	0.53	1.0	0.9	1.4	14.2	385	395	1.0	9.6	140	150	1000
2.5	4	0.53	1.0	0.9	1.4	15.1	435	450	1.0	10.5	175	190	1000
2.5	5	0.53	1.0	0.9	1.4	16.0	485	500	1.0	11.4	200	220	1000
2.5	6	0.53	1.1	0.9	1.5	17.4	570	590	1.1	12.6	245	265	1000
2.5	7	0.53	1.1	0.9	1.5	17.4	580	610	1.1	12.6	260	285	1000
2.5	8	0.53	1.1	0.9	1.5	19.0	650	680	1.1	14.2	295	325	1000
2.5	10	0.53	1.2	0.9	1.6	21.2	780	820	1.2	16.2	370	405	1000
2.5	12	0.53	1.2	0.9	1.6	21.8	850	890	1.2	16.8	430	470	1000
2.5	16	0.53	1.3	1.25	1.6	24.5	1160	1220	1.3	18.8	560	620	1000
2.5	18	0.53	1.3	1.25	1.7	25.7	1270	1330	1.3	19.8	630	690	1000
2.5	19	0.53	1.3	1.25	1.7	25.7	1290	1350	1.3	19.8	650	710	1000
2.5	20	0.53	1.3	1.25	1.7	26.9	1380	1450	1.3	21.0	700	770	1000
2.5	24	0.53	1.4	1.25	1.7	29.3	1570	1650	1.4	23.4	820	900	1000
2.5	30	0.53	1.5	1.25	1.8	31.1	1810	1910	1.5	25.0	1010	1110	1000
2.5	37	0.53	1.5	1.25	1.8	33.1	2080	2200	1.5	27.0	1210	1330	500/1000

For Cables of sizes or cores not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.9	0.9	1.3	10.6	210	210	0.9	6.2	44	47	1000
0.5	2	0.44	0.9	0.9	1.4	13.5	300	310	0.9	8.9	71	77	1000
0.5	4	0.44	1.0	0.9	1.4	15.2	380	390	1.0	10.6	110	125	1000
0.5	5	0.44	1.0	0.9	1.4	16.1	415	430	1.0	11.5	130	145	1000
0.5	6	0.44	1.1	0.9	1.5	17.6	480	500	1.1	12.8	155	175	1000
0.5	8	0.44	1.1	0.9	1.5	19.1	550	570	1.1	14.3	195	220	1000
0.5	10	0.44	1.2	0.9	1.5	21.2	650	680	1.2	16.4	240	270	1000
0.5	12	0.44	1.2	0.9	1.6	22.0	700	740	1.2	17.0	275	310	1000
0.5	16	0.44	1.2	1.25	1.6	24.5	940	990	1.2	18.8	340	390	1000
0.5	18	0.44	1.3	1.25	1.6	25.8	1020	1080	1.3	20.1	385	445	1000
0.5	19	0.44	1.3	1.25	1.6	25.8	1040	1100	1.3	20.1	400	460	1000
0.5	20	0.44	1.3	1.25	1.7	27.1	1100	1170	1.3	21.2	420	485	1000
0.5	24	0.44	1.4	1.25	1.7	29.6	1260	1330	1.4	23.7	510	580	1000
0.5	30	0.44	1.4	1.25	1.8	31.2	1410	1510	1.4	25.1	600	700	500/1000
0.5	37	0.44	1.5	1.25	1.8	33.4	1610	1730	1.5	27.3	730	850	500/1000
0.75	1	0.44	0.9	0.9	1.3	11.1	225	225	0.9	6.7	51	55	1000
0.75	2	0.44	1.0	0.9	1.4	14.4	335	345	1.0	9.8	89	97	1000
0.75	4	0.44	1.0	0.9	1.4	16.0	420	435	1.0	11.4	135	150	1000
0.75	5	0.44	1.1	0.9	1.5	17.5	490	510	1.1	12.7	170	185	1000
0.75	6	0.44	1.1	0.9	1.5	18.6	540	560	1.1	13.8	195	215	1000
0.75	8	0.44	1.2	0.9	1.5	20.5	640	670	1.2	15.7	250	280	1000
0.75	10	0.44	1.2	1.25	1.6	23.5	870	910	1.2	17.8	305	340	1000
0.75	12	0.44	1.2	1.25	1.6	24.1	930	970	1.2	18.4	345	390	1000
0.75	16	0.44	1.3	1.25	1.7	26.5	1110	1170	1.3	20.6	445	500	1000
0.75	18	0.44	1.3	1.25	1.7	27.7	1190	1250	1.3	21.8	495	560	1000
0.75	19	0.44	1.3	1.25	1.7	27.7	1210	1280	1.3	21.8	510	580	1000
0.75	20	0.44	1.4	1.25	1.7	29.1	1290	1360	1.4	23.2	550	620	1000
0.75	24	0.44	1.5	1.25	1.8	32.1	1500	1590	1.5	26.0	660	750	500/1000
0.75	30	0.44	1.5	1.25	1.8	33.6	1670	1780	1.5	27.5	790	900	500/1000
0.75	37	0.44	1.6	1.6	1.9	37.0	2140	2270	1.6	30.0	960	1090	500
1.0	1	0.44	0.9	0.9	1.3	11.4	240	240	0.9	7.0	58	62	1000
1.0	2	0.44	1.0	0.9	1.4	15.0	365	375	1.0	10.4	105	110	1000
1.0	4	0.44	1.0	0.9	1.4	16.7	460	480	1.0	12.1	160	180	1000
1.0	5	0.44	1.1	0.9	1.5	18.3	540	560	1.1	13.5	200	220	1000
1.0	6	0.44	1.1	0.9	1.5	19.5	590	620	1.1	14.7	230	255	1000
1.0	8	0.44	1.2	0.9	1.5	21.5	710	740	1.2	16.7	300	330	1000
1.0	10	0.44	1.2	1.25	1.6	24.7	970	1010	1.2	19.0	365	405	1000
1.0	12	0.44	1.3	1.25	1.6	25.5	1050	1100	1.3	19.8	425	475	1000
1.0	16	0.44	1.3	1.25	1.7	27.9	1250	1310	1.3	22.0	540	610	1000

500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	18	0.44	1.4	1.25	1.7	29.4	1360	1430	1.4	23.5	610	680	1000
1.0	19	0.44	1.4	1.25	1.7	29.4	1390	1460	1.4	23.5	640	710	1000
1.0	20	0.44	1.4	1.25	1.8	30.9	1480	1560	1.4	24.8	670	750	1000
1.0	24	0.44	1.5	1.25	1.8	33.8	1700	1790	1.5	27.7	800	900	500/1000
1.0	30	0.44	1.6	1.25	1.9	35.9	1950	2070	1.6	29.6	980	1100	500/1000
1.0	37	0.44	1.6	1.6	1.9	39.0	2420	2570	1.6	32.0	1170	1320	500
1.5	1	0.44	0.9	0.9	1.3	12.0	265	270	0.9	7.6	71	76	1000
1.5	2	0.44	1.0	0.9	1.4	16.0	415	420	1.0	11.4	130	135	1000
1.5	4	0.44	1.1	0.9	1.5	18.3	550	570	1.1	13.5	215	235	1000
1.5	5	0.44	1.1	0.9	1.5	19.6	630	650	1.1	14.8	255	280	1000
1.5	6	0.44	1.2	0.9	1.5	21.2	710	740	1.2	16.4	305	335	1000
1.5	8	0.44	1.2	1.25	1.6	24.1	970	1010	1.2	18.4	390	425	1000
1.5	10	0.44	1.3	1.25	1.7	27.0	1170	1210	1.3	21.1	485	530	1000
1.5	12	0.44	1.3	1.25	1.7	27.8	1270	1320	1.3	21.9	560	620	1000
1.5	16	0.44	1.4	1.25	1.8	30.6	1520	1600	1.4	24.5	730	800	1000
1.5	18	0.44	1.5	1.25	1.8	32.2	1660	1740	1.5	26.1	820	900	500/1000
1.5	19	0.44	1.5	1.25	1.8	32.2	1690	1780	1.5	26.1	850	940	500/1000
1.5	20	0.44	1.5	1.25	1.8	33.7	1790	1890	1.5	27.6	900	990	500/1000
1.5	24	0.44	1.6	1.6	1.9	37.9	2280	2400	1.6	30.9	1080	1190	500
1.5	30	0.44	1.7	1.6	2.0	40.2	2630	2770	1.7	33.0	1320	1460	500
1.5	37	0.44	1.8	1.6	2.0	43.1	3010	3180	1.8	35.9	1600	1770	500
2.5	1	0.53	1.0	0.9	1.4	13.6	330	340	1.0	9.0	100	105	1000
2.5	2	0.53	1.1	0.9	1.5	18.4	520	540	1.1	13.6	185	200	1000
2.5	4	0.53	1.2	0.9	1.6	21.1	730	750	1.2	16.1	315	340	1000
2.5	5	0.53	1.2	1.25	1.6	23.4	950	980	1.2	17.7	380	415	1000
2.5	6	0.53	1.3	1.25	1.7	25.5	1090	1130	1.3	19.6	455	495	1000
2.5	8	0.53	1.4	1.25	1.7	28.2	1300	1350	1.4	22.3	590	640	1000
2.5	10	0.53	1.5	1.25	1.8	31.6	1560	1620	1.5	25.5	730	800	500/1000
2.5	12	0.53	1.5	1.25	1.8	32.5	1700	1780	1.5	26.4	850	930	500/1000
2.5	16	0.53	1.6	1.6	1.9	36.6	2270	2370	1.6	29.6	1100	1210	500
2.5	18	0.53	1.7	1.6	2.0	38.7	2490	2610	1.7	31.5	1240	1360	500
2.5	19	0.53	1.7	1.6	2.0	38.7	2540	2670	1.7	31.5	1300	1420	500
2.5	20	0.53	1.7	1.6	2.0	40.6	2680	2820	1.7	33.4	1370	1500	500
2.5	24	0.53	1.9	1.6	2.1	44.9	3150	3310	1.9	37.5	1650	1810	500
2.5	30	0.53	1.9	1.6	2.2	47.4	3610	3810	1.9	39.8	2000	2200	500
2.5	37	0.53	2.1	2.0	2.3	52.1	4570	4810	2.1	43.5	2460	2700	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.9	0.9	1.3	11.0	225	230	0.9	6.6	52	57	1000
0.5	2	0.44	1.0	0.9	1.4	14.7	350	360	1.0	10.1	94	105	1000
0.5	4	0.44	1.0	0.9	1.4	16.3	440	455	1.0	11.7	145	165	1000
0.5	5	0.44	1.1	0.9	1.5	17.8	510	530	1.1	13.0	180	205	1000
0.5	6	0.44	1.1	0.9	1.5	19.0	560	590	1.1	14.2	205	235	1000
0.5	8	0.44	1.2	0.9	1.5	21.0	670	710	1.2	16.2	270	305	1000
0.5	10	0.44	1.2	1.25	1.6	24.0	910	960	1.2	18.3	325	370	1000
0.5	12	0.44	1.3	1.25	1.6	24.9	990	1050	1.3	19.2	380	435	1000
0.5	14	0.44	1.3	1.25	1.7	26.1	1080	1150	1.3	20.2	430	495	1000
0.5	16	0.44	1.3	1.25	1.7	27.2	1160	1240	1.3	21.3	480	560	1000
0.5	19	0.44	1.4	1.25	1.7	28.6	1290	1380	1.4	22.7	560	650	1000
0.5	20	0.44	1.4	1.25	1.7	29.9	1360	1450	1.4	24.0	590	690	1000
0.5	24	0.44	1.5	1.25	1.8	32.9	1580	1690	1.5	26.8	710	820	500/1000
0.5	30	0.44	1.5	1.25	1.8	34.5	1760	1900	1.5	28.4	850	990	500/1000
0.5	37	0.44	1.6	1.6	1.9	37.9	2240	2420	1.6	30.9	1030	1210	500
0.75	1	0.44	0.9	0.9	1.3	11.4	245	250	0.9	7.0	63	68	1000
0.75	2	0.44	1.0	0.9	1.4	15.5	385	395	1.0	10.9	115	125	1000
0.75	4	0.44	1.1	0.9	1.5	17.7	510	530	1.1	12.9	190	210	1000
0.75	5	0.44	1.1	0.9	1.5	18.9	580	610	1.1	14.1	225	250	1000
0.75	6	0.44	1.1	0.9	1.5	20.2	650	680	1.1	15.4	260	295	1000
0.75	8	0.44	1.2	1.25	1.6	23.2	910	950	1.2	17.5	340	385	1000
0.75	10	0.44	1.3	1.25	1.7	26.0	1070	1130	1.3	20.1	425	475	1000
0.75	12	0.44	1.3	1.25	1.7	26.7	1150	1220	1.3	20.8	485	550	1000
0.75	14	0.44	1.3	1.25	1.7	27.8	1260	1340	1.3	21.9	550	630	1000
0.75	16	0.44	1.4	1.25	1.7	29.2	1380	1470	1.4	23.3	630	720	1000
0.75	19	0.44	1.4	1.25	1.8	30.7	1520	1630	1.4	24.6	730	830	1000
0.75	20	0.44	1.5	1.25	1.8	32.3	1630	1740	1.5	26.2	780	890	500/1000
0.75	24	0.44	1.6	1.25	1.9	35.6	1890	2020	1.6	29.3	930	1060	500/1000
0.75	30	0.44	1.6	1.6	1.9	38.1	2350	2510	1.6	31.1	1120	1290	500
0.75	37	0.44	1.7	1.6	2.0	41.0	2700	2900	1.7	33.8	1370	1570	500
1.0	1	0.44	0.9	0.9	1.3	11.8	260	265	0.9	7.4	72	78	1000
1.0	2	0.44	1.0	0.9	1.4	16.1	420	430	1.0	11.5	135	145	1000
1.0	4	0.44	1.1	0.9	1.5	18.5	570	600	1.1	13.7	225	250	1000
1.0	5	0.44	1.1	0.9	1.5	19.8	640	670	1.1	15.0	270	300	1000
1.0	6	0.44	1.2	0.9	1.5	21.4	730	770	1.2	16.6	325	360	1000
1.0	8	0.44	1.2	1.25	1.6	24.4	1010	1060	1.2	18.7	410	460	1000
1.0	10	0.44	1.3	1.25	1.7	27.3	1210	1270	1.3	21.4	510	570	1000
1.0	12	0.44	1.3	1.25	1.7	28.1	1300	1370	1.3	22.2	590	660	1000
1.0	14	0.44	1.4	1.25	1.7	29.5	1440	1520	1.4	23.6	690	770	1000

500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	1.4	1.25	1.8	31.0	1580	1670	1.4	24.9	770	870	1000
1.0	19	0.44	1.5	1.25	1.8	32.6	1760	1870	1.5	26.5	910	1020	500/1000
1.0	20	0.44	1.5	1.25	1.8	34.1	1850	1970	1.5	28.0	950	1070	500/1000
1.0	24	0.44	1.6	1.6	1.9	38.4	2370	2510	1.6	31.4	1140	1290	500
1.0	30	0.44	1.7	1.6	2.0	40.7	2730	2910	1.7	33.5	1400	1580	500
1.0	37	0.44	1.8	1.6	2.0	43.6	3130	3350	1.8	36.4	1700	1920	500
1.5	1	0.44	0.9	0.9	1.4	12.7	300	305	0.9	8.1	90	97	1000
1.5	2	0.44	1.1	0.9	1.5	17.7	500	510	1.1	12.9	175	190	1000
1.5	4	0.44	1.1	0.9	1.5	19.9	670	700	1.1	15.1	295	320	1000
1.5	5	0.44	1.2	0.9	1.6	21.7	780	820	1.2	16.7	360	395	1000
1.5	6	0.44	1.2	1.25	1.6	24.0	1010	1050	1.2	18.3	425	465	1000
1.5	8	0.44	1.3	1.25	1.7	26.7	1220	1280	1.3	20.8	550	610	1000
1.5	10	0.44	1.4	1.25	1.7	29.8	1450	1520	1.4	23.9	690	760	1000
1.5	12	0.44	1.4	1.25	1.8	30.8	1610	1690	1.4	24.7	800	880	1000
1.5	14	0.44	1.5	1.25	1.8	32.3	1780	1870	1.5	26.2	920	1020	500/1000
1.5	16	0.44	1.5	1.25	1.8	33.8	1940	2050	1.5	27.7	1040	1150	500/1000
1.5	19	0.44	1.6	1.6	1.9	36.5	2380	2520	1.6	29.5	1220	1360	500
1.5	20	0.44	1.6	1.6	1.9	38.2	2520	2660	1.6	31.2	1290	1430	500
1.5	24	0.44	1.8	1.6	2.0	42.3	2940	3110	1.8	35.1	1560	1730	500
1.5	30	0.44	1.8	1.6	2.1	44.7	3390	3600	1.8	37.3	1890	2100	500
1.5	37	0.44	1.9	1.6	2.2	48.1	3940	4200	1.9	40.5	2310	2560	500
2.5	1	0.53	1.0	0.9	1.4	14.2	375	385	1.0	9.6	130	140	1000
2.5	2	0.53	1.2	0.9	1.5	20.1	630	650	1.2	15.3	255	275	1000
2.5	4	0.53	1.2	1.25	1.6	23.7	1020	1060	1.2	18.0	435	475	1000
2.5	5	0.53	1.3	1.25	1.7	25.9	1190	1240	1.3	20.0	540	590	1000
2.5	6	0.53	1.4	1.25	1.7	28.0	1350	1410	1.4	22.1	640	700	1000
2.5	8	0.53	1.5	1.25	1.8	31.2	1650	1730	1.5	25.1	840	920	500/1000
2.5	10	0.53	1.6	1.6	1.9	35.8	2180	2280	1.6	28.8	1040	1140	500/1000
2.5	12	0.53	1.6	1.6	1.9	36.8	2400	2520	1.6	29.8	1220	1340	500
2.5	14	0.53	1.7	1.6	2.0	38.8	2670	2810	1.7	31.6	1410	1550	500
2.5	16	0.53	1.7	1.6	2.0	40.7	2920	3080	1.7	33.5	1590	1750	500
2.5	19	0.53	1.8	1.6	2.1	43.0	3290	3480	1.8	35.6	1870	2060	500
2.5	20	0.53	1.9	1.6	2.1	45.3	3500	3700	1.9	37.9	1990	2190	500
2.5	24	0.53	2.0	2.0	2.3	50.9	4420	4660	2.0	42.3	2370	2610	500
2.5	30	0.53	2.1	2.0	2.3	53.7	5090	5390	2.1	45.1	2910	3210	500
2.5	37	0.53	2.2	2.0	2.4	57.9	5930	6300	2.2	49.1	3550	3920	500

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

500 VOLTS, MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	1.0	0.9	1.4	14.8	355	365	1.0	10.2	97	105	1000
0.5	4	0.44	1.0	0.9	1.5	16.7	450	465	1.0	11.9	150	165	1000
0.5	5	0.44	1.1	0.9	1.5	18.0	520	530	1.1	13.2	185	200	1000
0.5	6	0.44	1.1	0.9	1.5	19.2	580	590	1.1	14.4	215	235	1000
0.5	8	0.44	1.2	0.9	1.6	21.4	690	710	1.2	16.4	275	300	1000
0.5	10	0.44	1.3	1.25	1.6	24.5	940	970	1.3	18.8	345	375	1000
0.5	12	0.44	1.3	1.25	1.7	25.3	1030	1070	1.3	19.4	390	430	1000
0.5	16	0.44	1.4	1.25	1.7	27.7	1200	1250	1.4	21.8	510	560	1000
0.5	18	0.44	1.4	1.25	1.7	28.9	1300	1350	1.4	23.0	560	620	1000
0.5	19	0.44	1.4	1.25	1.7	28.9	1320	1380	1.4	23.0	580	640	1000
0.5	20	0.44	1.4	1.25	1.8	30.4	1410	1470	1.4	24.3	610	680	1000
0.5	24	0.44	1.5	1.25	1.8	33.3	1610	1690	1.5	27.2	730	810	500/1000
0.5	30	0.44	1.6	1.6	1.9	36.0	2030	2130	1.6	29.0	890	990	500
0.5	37	0.44	1.7	1.6	2.0	38.8	2330	2450	1.7	31.6	1080	1200	500
0.75	2	0.44	1.0	0.9	1.4	15.6	390	395	1.0	11.0	110	120	1000
0.75	4	0.44	1.1	0.9	1.5	17.8	510	530	1.1	13.0	185	200	1000
0.75	5	0.44	1.1	0.9	1.5	19.0	570	590	1.1	14.2	220	235	1000
0.75	6	0.44	1.2	0.9	1.5	20.5	650	680	1.2	15.7	260	285	1000
0.75	8	0.44	1.2	1.25	1.6	23.4	900	930	1.2	17.7	330	360	1000
0.75	10	0.44	1.3	1.25	1.7	26.2	1060	1100	1.3	20.3	410	445	1000
0.75	12	0.44	1.3	1.25	1.7	26.9	1150	1190	1.3	21.0	470	510	1000
0.75	16	0.44	1.4	1.25	1.8	29.7	1370	1430	1.4	23.6	610	670	1000
0.75	18	0.44	1.5	1.25	1.8	31.2	1500	1560	1.5	25.1	690	750	500/1000
0.75	19	0.44	1.5	1.25	1.8	31.2	1520	1590	1.5	25.1	710	780	500/1000
0.75	20	0.44	1.5	1.25	1.8	32.6	1610	1680	1.5	26.5	750	830	500/1000
0.75	24	0.44	1.6	1.6	1.9	36.6	2060	2150	1.6	29.6	900	990	500
0.75	30	0.44	1.7	1.6	2.0	38.8	2360	2470	1.7	31.6	1100	1210	500
0.75	37	0.44	1.8	1.6	2.0	41.6	2690	2830	1.8	34.4	1330	1470	500
1.0	2	0.44	1.0	0.9	1.4	16.2	420	425	1.0	11.6	125	135	1000
1.0	4	0.44	1.1	0.9	1.5	18.6	560	570	1.1	13.8	210	225	1000
1.0	5	0.44	1.1	0.9	1.5	19.9	630	650	1.1	15.1	250	270	1000
1.0	6	0.44	1.2	0.9	1.6	21.7	720	750	1.2	16.7	300	325	1000
1.0	8	0.44	1.3	1.25	1.6	24.7	1000	1030	1.3	19.0	390	420	1000
1.0	10	0.44	1.3	1.25	1.7	27.5	1170	1210	1.3	21.6	475	510	1000
1.0	12	0.44	1.4	1.25	1.7	28.4	1280	1330	1.4	22.5	560	610	1000
1.0	16	0.44	1.5	1.25	1.8	31.4	1540	1610	1.5	25.3	720	790	500/1000

500 VOLTS, MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm²		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	18	0.44	1.5	1.25	1.8	32.8	1660	1740	1.5	26.7	800	870	500/1000
1.0	19	0.44	1.5	1.25	1.8	32.8	1700	1770	1.5	26.7	830	910	500/1000
1.0	20	0.44	1.6	1.25	1.9	34.7	1820	1900	1.6	28.4	890	970	500/1000
1.0	24	0.44	1.7	1.6	2.0	38.9	2330	2430	1.7	31.7	1070	1160	500
1.0	30	0.44	1.7	1.6	2.0	40.9	2620	2740	1.7	33.7	1280	1400	500
1.0	37	0.44	1.8	1.6	2.1	44.0	3030	3180	1.8	36.6	1560	1710	500
1.5	2	0.44	1.1	0.9	1.5	17.7	485	490	1.1	12.9	160	170	1000
1.5	4	0.44	1.2	0.9	1.5	20.1	650	660	1.2	15.3	265	285	1000
1.5	5	0.44	1.2	0.9	1.6	21.7	740	760	1.2	16.7	320	345	1000
1.5	6	0.44	1.3	1.25	1.6	24.2	980	1010	1.3	18.5	380	410	1000
1.5	8	0.44	1.3	1.25	1.7	26.7	1150	1190	1.3	20.8	485	520	1000
1.5	10	0.44	1.4	1.25	1.8	30.0	1380	1430	1.4	23.9	600	650	1000
1.5	12	0.44	1.5	1.25	1.8	31.0	1520	1570	1.5	24.9	710	770	1000
1.5	16	0.44	1.6	1.25	1.9	34.3	1830	1910	1.6	28.0	920	990	500/1000
1.5	18	0.44	1.6	1.6	1.9	36.5	2180	2270	1.6	29.5	1020	1100	500
1.5	19	0.44	1.6	1.6	1.9	36.5	2230	2310	1.6	29.5	1070	1150	500
1.5	20	0.44	1.7	1.6	2.0	38.6	2380	2480	1.7	31.4	1140	1230	500
1.5	24	0.44	1.8	1.6	2.1	42.5	2760	2880	1.8	35.1	1360	1470	500
1.5	30	0.44	1.9	1.6	2.1	44.9	3160	3300	1.9	37.5	1660	1800	500
1.5	37	0.44	2.0	2.0	2.2	49.2	3970	4140	2.0	40.8	2020	2190	500
2.5	2	0.53	1.2	0.9	1.5	20.0	600	610	1.2	15.2	220	235	1000
2.5	4	0.53	1.3	1.25	1.6	23.8	960	980	1.3	18.1	375	400	1000
2.5	5	0.53	1.3	1.25	1.7	25.8	1090	1120	1.3	19.9	450	485	1000
2.5	6	0.53	1.4	1.25	1.7	27.8	1250	1290	1.4	21.9	540	580	1000
2.5	8	0.53	1.5	1.25	1.8	31.1	1510	1560	1.5	25.0	700	750	1000
2.5	10	0.53	1.6	1.6	1.9	35.6	2000	2070	1.6	28.6	870	940	500/1000
2.5	12	0.53	1.6	1.6	1.9	36.7	2170	2250	1.6	29.7	1010	1090	500
2.5	16	0.53	1.8	1.6	2.0	40.7	2660	2770	1.8	33.5	1320	1430	500
2.5	18	0.53	1.8	1.6	2.1	42.8	2890	3010	1.8	35.4	1470	1590	500
2.5	19	0.53	1.8	1.6	2.1	42.8	2960	3090	1.8	35.4	1540	1660	500
2.5	20	0.53	1.9	1.6	2.1	45.0	3130	3270	1.9	37.6	1640	1770	500
2.5	24	0.53	2.0	2.0	2.3	50.7	4000	4160	2.0	42.1	1960	2120	500
2.5	30	0.53	2.1	2.0	2.3	53.4	4540	4740	2.1	44.8	2390	2590	500
2.5	37	0.53	2.3	2.0	2.4	57.8	5310	5560	2.3	49.0	2930	3180	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

500 VOLTS, MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	1.0	0.9	1.4	15.9	400	410	1.0	11.3	115	125	1000
0.5	4	0.44	1.1	0.9	1.5	18.2	530	550	1.1	13.4	195	210	1000
0.5	5	0.44	1.1	0.9	1.5	19.5	590	620	1.1	14.7	230	255	1000
0.5	6	0.44	1.2	0.9	1.6	21.2	690	720	1.2	16.2	275	305	1000
0.5	8	0.44	1.3	1.25	1.6	24.2	950	990	1.3	18.5	355	395	1000
0.5	10	0.44	1.3	1.25	1.7	26.9	1110	1160	1.3	21.0	430	480	1000
0.5	12	0.44	1.4	1.25	1.7	27.8	1210	1270	1.4	21.9	510	560	1000
0.5	14	0.44	1.4	1.25	1.7	28.9	1310	1380	1.4	23.0	570	640	1000
0.5	16	0.44	1.4	1.25	1.8	30.5	1440	1510	1.4	24.4	640	720	1000
0.5	19	0.44	1.5	1.25	1.8	32.0	1590	1680	1.5	25.9	750	840	500/1000
0.5	20	0.44	1.5	1.25	1.8	33.5	1680	1770	1.5	27.4	790	890	500/1000
0.5	24	0.44	1.6	1.6	1.9	37.6	2160	2270	1.6	30.6	950	1070	500
0.5	30	0.44	1.7	1.6	2.0	39.9	2450	2600	1.7	32.7	1160	1300	500
0.5	37	0.44	1.8	1.6	2.1	43.0	2830	3010	1.8	35.6	1410	1580	500
0.75	2	0.44	1.1	0.9	1.5	17.2	460	470	1.1	12.4	145	155	1000
0.75	4	0.44	1.1	0.9	1.5	19.2	590	620	1.1	14.4	230	255	1000
0.75	5	0.44	1.2	0.9	1.6	21.0	690	720	1.2	16.0	285	315	1000
0.75	6	0.44	1.2	1.25	1.6	23.2	900	930	1.2	17.5	335	365	1000
0.75	8	0.44	1.3	1.25	1.7	25.8	1080	1130	1.3	19.9	430	475	1000
0.75	10	0.44	1.4	1.25	1.7	28.8	1270	1330	1.4	22.9	540	590	1000
0.75	12	0.44	1.4	1.25	1.8	29.8	1390	1450	1.4	23.7	620	680	1000
0.75	14	0.44	1.5	1.25	1.8	31.2	1530	1600	1.5	25.1	720	790	500/1000
0.75	16	0.44	1.5	1.25	1.8	32.6	1660	1740	1.5	26.5	800	890	500/1000
0.75	19	0.44	1.6	1.25	1.9	34.5	1870	1970	1.6	28.2	940	1040	500/1000
0.75	20	0.44	1.6	1.6	1.9	36.9	2170	2280	1.6	29.9	990	1100	500
0.75	24	0.44	1.7	1.6	2.0	40.6	2500	2630	1.7	33.4	1190	1320	500
0.75	30	0.44	1.8	1.6	2.1	43.0	2880	3040	1.8	35.6	1450	1610	500
0.75	37	0.44	1.9	1.6	2.1	46.1	3300	3500	1.9	38.7	1760	1960	500
1.0	2	0.44	1.1	0.9	1.5	17.9	495	510	1.1	13.1	165	175	1000
1.0	4	0.44	1.1	0.9	1.5	20.1	650	670	1.1	15.3	270	295	1000
1.0	5	0.44	1.2	0.9	1.6	22.0	760	790	1.2	17.0	335	365	1000
1.0	6	0.44	1.2	1.25	1.6	24.3	990	1020	1.2	18.6	390	425	1000
1.0	8	0.44	1.3	1.25	1.7	27.1	1190	1240	1.3	21.2	510	560	1000
1.0	10	0.44	1.4	1.25	1.8	30.4	1420	1480	1.4	24.3	630	690	1000
1.0	12	0.44	1.5	1.25	1.8	31.5	1560	1640	1.5	25.4	740	810	500/1000
1.0	14	0.44	1.5	1.25	1.8	32.8	1710	1790	1.5	26.7	840	930	500/1000

500 VOLTS, MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES AS PER EN 50228

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Nominal thickness of inner sheath	Diameter of G.I. armour wire	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight - PE insulation	Approx. weight - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	1.5	1.25	1.8	34.4	1860	1950	1.5	28.3	950	1050	500/1000
1.0	19	0.44	1.6	1.6	1.9	37.1	2300	2410	1.6	30.1	1110	1230	500
1.0	20	0.44	1.7	1.6	2.0	39.2	2460	2580	1.7	32.0	1190	1310	500
1.0	24	0.44	1.8	1.6	2.0	43.0	2830	2970	1.8	35.8	1420	1570	500
1.0	30	0.44	1.9	1.6	2.1	45.6	3260	3440	1.9	38.2	1740	1920	500
1.0	37	0.44	2.0	2.0	2.2	49.9	4100	4320	2.0	41.5	2110	2340	500
1.5	2	0.44	1.1	0.9	1.5	19.1	560	570	1.1	14.3	205	215	1000
1.5	4	0.44	1.2	1.25	1.6	22.7	890	920	1.2	17.0	350	375	1000
1.5	5	0.44	1.3	1.25	1.6	24.6	1030	1060	1.3	18.9	430	465	1000
1.5	6	0.44	1.3	1.25	1.7	26.5	1170	1210	1.3	20.6	500	550	1000
1.5	8	0.44	1.4	1.25	1.8	29.6	1420	1480	1.4	23.5	660	710	1000
1.5	10	0.44	1.5	1.25	1.8	33.1	1680	1750	1.5	27.0	820	890	500/1000
1.5	12	0.44	1.6	1.25	1.9	34.4	1880	1970	1.6	28.1	960	1040	500/1000
1.5	14	0.44	1.6	1.6	1.9	36.6	2260	2350	1.6	29.6	1100	1190	500
1.5	16	0.44	1.7	1.6	2.0	38.7	2500	2610	1.7	31.5	1250	1360	500
1.5	19	0.44	1.7	1.6	2.0	40.5	2760	2900	1.7	33.3	1450	1580	500
1.5	20	0.44	1.8	1.6	2.1	42.9	2970	3110	1.8	35.5	1540	1680	500
1.5	24	0.44	1.9	1.6	2.2	47.2	3450	3620	1.9	39.6	1850	2010	500
1.5	30	0.44	2.0	2.0	2.2	50.7	4280	4490	2.0	42.3	2260	2470	500
1.5	37	0.44	2.1	2.0	2.3	54.6	4960	5220	2.1	46.0	2750	3010	500
2.5	2	0.53	1.2	1.25	1.6	22.7	830	850	1.2	17.0	285	305	1000
2.5	4	0.53	1.3	1.25	1.7	26.1	1150	1190	1.3	20.2	500	540	1000
2.5	5	0.53	1.4	1.25	1.7	28.3	1340	1390	1.4	22.4	620	670	1000
2.5	6	0.53	1.5	1.25	1.8	30.8	1540	1600	1.5	24.7	740	800	1000
2.5	8	0.53	1.6	1.6	1.9	35.2	2070	2150	1.6	28.2	960	1040	500/1000
2.5	10	0.53	1.7	1.6	2.0	39.5	2480	2580	1.7	32.3	1190	1290	500
2.5	12	0.53	1.8	1.6	2.0	40.8	2740	2860	1.8	33.6	1400	1520	500
2.5	14	0.53	1.8	1.6	2.1	42.8	3030	3170	1.8	35.4	1600	1740	500
2.5	16	0.53	1.9	1.6	2.1	45.1	3320	3480	1.9	37.7	1820	1980	500
2.5	19	0.53	2.0	2.0	2.2	48.5	4050	4240	2.0	40.1	2140	2330	500
2.5	20	0.53	2.1	2.0	2.3	51.2	4350	4550	2.1	42.6	2280	2480	500
2.5	24	0.53	2.2	2.0	2.4	56.4	5030	5270	2.2	47.6	2720	2960	400
2.5	30	0.53	2.3	2.5	2.5	60.8	6300	6600	2.3	50.8	3330	3630	300
2.5	37	0.53	2.5	2.5	2.6	65.6	7340	7710	2.5	55.4	4080	4450	300

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300/500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.3	0.9	1.24	10.1	185	190	1.8	8.2	76	79	1000
0.5	2	0.44	0.3	0.9	1.24	12.8	270	275	1.8	10.9	115	120	1000
0.5	4	0.44	0.3	0.9	1.24	14.2	330	345	1.8	12.3	155	170	1000
0.5	5	0.44	0.3	0.9	1.24	15.2	365	380	1.8	13.3	180	195	1000
0.5	6	0.44	0.3	0.9	1.24	16.2	405	425	1.8	14.3	205	220	1000
0.5	8	0.44	0.3	0.9	1.24	17.8	475	500	1.8	15.9	245	270	1000
0.5	10	0.44	0.3	0.9	1.24	19.7	550	580	1.8	17.8	290	320	1000
0.5	12	0.44	0.3	0.9	1.24	20.2	590	630	1.8	18.3	325	360	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	22.2	730	780	1.8	20.2	395	445	1000
0.5	18	0.44	0.3	4.0 x 0.8	1.40	23.3	790	850	1.8	21.2	435	490	1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	23.3	810	870	1.8	21.2	445	510	1000
0.5	20	0.44	0.3	4.0 x 0.8	1.40	24.4	830	890	2.0	22.8	495	560	1000
0.5	24	0.44	0.3	4.0 x 0.8	1.40	26.7	960	1040	2.0	25.1	570	650	1000
0.5	30	0.44	0.3	4.0 x 0.8	1.40	28.1	1080	1180	2.0	26.5	670	760	1000
0.5	37	0.44	0.3	4.0 x 0.8	1.40	30.2	1220	1340	2.0	28.5	790	900	500/1000
0.75	1	0.44	0.3	0.9	1.24	10.5	200	205	1.8	8.6	86	89	1000
0.75	2	0.44	0.3	0.9	1.24	13.5	290	300	1.8	11.6	135	140	1000
0.75	4	0.44	0.3	0.9	1.24	15.1	375	385	1.8	13.2	185	200	1000
0.75	5	0.44	0.3	0.9	1.24	16.1	420	435	1.8	14.2	215	235	1000
0.75	6	0.44	0.3	0.9	1.24	17.3	465	485	1.8	15.4	245	265	1000
0.75	8	0.44	0.3	0.9	1.24	19.0	550	580	1.8	17.1	300	330	1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	21.2	660	700	1.8	19.2	355	395	1000
0.75	12	0.44	0.3	4.0 x 0.8	1.40	21.8	730	780	1.8	19.8	400	445	1000
0.75	16	0.44	0.3	4.0 x 0.8	1.40	23.9	860	910	2.0	22.2	520	580	1000
0.75	18	0.44	0.3	4.0 x 0.8	1.40	25.0	930	1000	2.0	23.4	570	630	1000
0.75	19	0.44	0.3	4.0 x 0.8	1.40	25.0	950	1020	2.0	23.4	590	660	1000
0.75	20	0.44	0.3	4.0 x 0.8	1.40	26.2	980	1060	2.0	24.6	620	690	1000
0.75	24	0.44	0.3	4.0 x 0.8	1.40	28.8	1140	1220	2.0	27.2	720	810	1000
0.75	30	0.44	0.3	4.0 x 0.8	1.40	30.3	1290	1400	2.0	28.7	850	960	500/1000
0.75	37	0.44	0.3	4.0 x 0.8	1.4	32.6	1500	1630	2.0	31.0	1010	1140	500/1000
1.0	1	0.44	0.3	0.9	1.24	10.9	215	220	1.8	9.0	95	99	1000
1.0	2	0.44	0.3	0.9	1.24	14.1	320	330	1.8	12.2	150	160	1000
1.0	4	0.44	0.3	0.9	1.24	15.8	415	430	1.8	13.9	215	230	1000
1.0	5	0.44	0.3	0.9	1.24	16.9	465	485	1.8	15.0	250	270	1000
1.0	6	0.44	0.3	0.9	1.24	18..1	520	550	1.8	16.3	290	310	1000
1.0	8	0.44	0.3	0.9	1.24	20.0	620	650	1.8	18.1	355	390	1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	22.4	760	800	1.8	20.3	425	465	1000
1.0	12	0.44	0.3	4.0 x 0.8	1.40	23.0	820	870	1.8	21.0	485	530	1000

300/500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm²		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	0.3	4.0 x 0.8	1.40	25.2	990	1050	2.0	23.6	630	690	1000
1.0	18	0.44	0.3	4.0 x 0.8	1.40	26.5	1080	1150	2.0	24.9	690	760	1000
1.0	19	0.44	0.3	4.0 x 0.8	1.40	26.5	1100	1180	2.0	24.9	710	790	1000
1.0	20	0.44	0.3	4.0 x 0.8	1.40	27.8	1140	1220	2.0	26.2	750	830	1000
1.0	24	0.44	0.3	4.0 x 0.8	1.40	30.6	1320	1420	2.0	28.9	880	980	500/1000
1.0	30	0.44	0.3	4.0 x 0.8	1.40	32.2	1510	1630	2.0	30.6	1050	1170	500/1000
1.0	37	0.44	0.3	4.0 x 0.8	1.56	34.9	1790	1940	2.0	33.0	1250	1400	500/1000
1.5	1	0.44	0.3	0.9	1.24	11.5	240	245	1.8	9.6	110	115	1000
1.5	2	0.44	0.3	0.9	1.24	15.0	365	375	1.8	13.2	180	185	1000
1.5	4	0.44	0.3	0.9	1.24	17.0	485	500	1.8	15.1	265	285	1000
1.5	5	0.44	0.3	0.9	1.24	18.2	550	570	1.8	16.4	310	335	1000
1.5	6	0.44	0.3	0.9	1.24	19.6	620	640	1.8	17.7	360	385	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	21.8	780	820	1.8	19.8	450	485	1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	24.4	900	950	2.0	22.7	560	610	1000
1.5	16	0.44	0.3	4.0 x 0.8	1.40	27.6	1190	1260	2.0	25.9	800	880	1000
1.5	18	0.44	0.3	4.0 x 0.8	1.40	28.9	1300	1380	2.0	27.3	890	970	1000
1.5	19	0.44	0.3	4.0 x 0.8	1.40	28.9	1330	1420	2.0	27.3	920	1010	1000
1.5	20	0.44	0.3	4.0 x 0.8	1.40	30.4	1410	1500	2.0	28.8	970	1060	500/1000
1.5	24	0.44	0.3	4.0 x 0.8	1.56	33.8	1650	1760	2.0	31.9	1140	1250	500/1000
1.5	30	0.44	0.3	4.0 x 0.8	1.56	35.7	1900	2040	2.0	33.8	1370	1500	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	38.6	2240	2410	2.2	36.9	1670	1840	500
2.5	1	0.53	0.3	0.9	1.24	12.7	290	295	1.8	10.8	140	150	1000
2.5	2	0.53	0.3	0.9	1.24	17.0	455	470	1.8	15.2	235	250	1000
2.5	4	0.53	0.3	0.9	1.24	19.4	620	650	1.8	17.5	365	395	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	21.1	740	780	1.8	19.1	435	470	1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	22.8	840	880	1.8	20.7	510	550	1000
2.5	8	0.53	0.3	4.0 x 0.8	1.40	25.3	1020	1080	2.0	23.7	660	710	1000
2.5	10	0.53	0.3	4.0 x 0.8	1.40	28.4	1210	1280	2.0	26.7	800	870	1000
2.5	12	0.53	0.3	4.0 x 0.8	1.40	29.3	1330	1410	2.0	27.6	920	1000	1000
2.5	16	0.53	0.3	4.0 x 0.8	1.56	32.6	1650	1760	2.0	30.6	1170	1270	500/1000
2.5	18	0.53	0.3	4.0 x 0.8	1.56	34.2	1800	1920	2.0	32.3	1290	1410	500/1000
2.5	19	0.53	0.3	4.0 x 0.8	1.56	34.2	1860	1990	2.0	32.3	1350	1470	500/1000
2.5	20	0.53	0.4	4.0 x 0.8	1.56	36.3	2000	2130	2.2	34.6	1450	1590	500
2.5	24	0.53	0.4	4.0 x 0.8	1.56	40.0	2310	2470	2.2	38.3	1710	1870	500
2.5	30	0.53	0.4	4.0 x 0.8	1.56	42.3	2710	2910	2.2	40.6	2060	2260	500
2.5	37	0.53	0.4	4.0 x 0.8	1.72	45.9	3220	3460	2.2	43.9	2480	2730	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300/500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.3	0.9	1.24	10.4	200	205	1.8	8.6	86	91	1000
0.5	2	0.44	0.3	0.9	1.24	13.7	305	315	1.8	11.9	140	150	1000
0.5	4	0.44	0.3	0.9	1.24	15.4	385	405	1.8	13.5	195	215	1000
0.5	5	0.44	0.3	0.9	1.24	16.5	435	460	1.8	14.6	225	250	1000
0.5	6	0.44	0.3	0.9	1.24	17.7	490	520	1.8	15.8	260	285	1000
0.5	8	0.44	0.3	0.9	1.24	19.4	570	610	1.8	17.6	315	355	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	21.8	710	760	1.8	19.7	375	425	1000
0.5	12	0.44	0.3	4.0 x 0.8	1.40	22.4	760	810	1.8	20.4	425	480	1000
0.5	14	0.44	0.3	4.0 x 0.8	1.40	23.4	830	900	1.8	21.3	475	540	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	24.5	890	960	2.0	22.9	550	630	1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	25.7	990	1080	2.0	24.1	620	710	1000
0.5	20	0.44	0.3	4.0 x 0.8	1.40	27.0	1050	1140	2.0	25.4	660	750	1000
0.5	24	0.44	0.3	4.0 x 0.8	1.40	29.6	1210	1320	2.0	28.0	770	880	1000
0.5	30	0.44	0.3	4.0 x 0.8	1.40	31.2	1370	1510	2.0	29.6	910	1050	500/1000
0.5	37	0.44	0.3	4.0 x 0.8	1.56	33.8	1590	1760	2.0	31.9	1080	1250	500/1000
0.75	1	0.44	0.3	0.9	1.24	10.9	220	225	1.8	9.0	99	105	1000
0.75	2	0.44	0.3	0.9	1.24	14.5	345	355	1.8	12.6	160	175	1000
0.75	4	0.44	0.3	0.9	1.24	16.3	445	465	1.8	14.5	235	260	1000
0.75	5	0.44	0.3	0.9	1.24	17.5	500	530	1.8	15.7	275	305	1000
0.75	6	0.44	0.3	0.9	1.24	18.8	560	600	1.8	17.0	315	350	1000
0.75	8	0.44	0.3	4.0 x 0.8	1.24	20.6	680	730	1.8	18.9	395	435	1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	23.3	830	890	1.8	21.3	475	530	1000
0.75	12	0.44	0.3	4.0 x 0.8	1.40	24.0	900	960	2.0	22.4	560	620	1000
0.75	14	0.44	0.3	4.0 x 0.8	1.40	25.1	990	1070	2.0	23.5	630	700	1000
0.75	16	0.44	0.3	4.0 x 0.8	1.40	26.3	1090	1170	2.0	24.7	700	780	1000
0.75	19	0.44	0.3	4.0 x 0.8	.1.40	27.6	1190	1290	2.0	26.0	800	900	1000
0.75	20	0.44	0.3	4.0 x 0.8	1.40	29.1	1250	1360	2.0	27.4	840	950	1000
0.75	24	0.44	0.3	4.0 x 0.8	1.40	32.0	1450	1580	2.0	30.3	990	1120	500/1000
0.75	30	0.44	0.3	4.0 x 0.8	1.56	34.0	1690	1850	2.0	32.1	1180	1340	500/1000
0.75	37	0.44	0.4	4.0 x 0.8	1.56	36.8	1980	2180	2.2	35.1	1440	1640	500
1.0	1	0.44	0.3	0.9	1.24	11.3	240	245	1.8	9.4	110	115	1000
1.0	2	0.44	0.3	0.9	1.24	15.2	380	390	1.8	13.3	185	200	1000
1.0	4	0.44	0.3	0.9	1.24	17.2	500	520	1.8	15.3	280	305	1000
1.0	5	0.44	0.3	0.9	1.24	18.5	570	600	1.8	16.6	330	360	1000
1.0	6	0.44	0.3	0.9	1.24	19.9	640	680	1.8	18.0	380	415	1000
1.0	8	0.44	0.3	4.0 x 0.8	1.40	22.1	810	860	1.8	20.1	475	520	1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	24.7	930	990	2.0	23.0	600	660	1000
1.0	12	0.44	0.3	4.0 x 0.8	1.40	25.4	1040	1110	2.0	23.8	680	750	1000
1.0	14	0.44	0.3	4.0 x 0.8	1.40	26.6	1150	1240	2.0	25.0	770	850	1000

300/500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insula-tion	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	0.3	4.0 x 0.8	1.40	27.9	1270	1360	2.0	26.3	850	950	1000
1.0	19	0.44	0.3	4.0 x 0.8	1.40	29.3	1390	1510	2.0	27.7	980	1100	1000
1.0	20	0.44	0.3	4.0 x 0.8	1.40	30.9	1470	1590	2.0	29.2	1030	1150	500/1000
1.0	24	0.44	0.3	4.0 x 0.8	1.40	34.0	1710	1850	2.0	32.4	1220	1360	500/1000
1.0	30	0.44	0.3	4.0 x 0.8	1.56	36.2	2030	2210	2.0	34.3	1460	1640	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	39.1	2390	2610	2.2	37.4	1790	2010	500
1.5	1	0.44	0.3	0.9	1.24	11.9	270	275	1.8	10.0	130	140	1000
1.5	2	0.44	0.3	0.9	1.24	16.3	435	445	1.8	14.4	225	240	1000
1.5	4	0.44	0.3	0.9	1.24	18.5	590	620	1.8	16.6	350	375	1000
1.5	5	0.44	0.3	0.9	1.24	20.0	680	710	1.8	18.1	415	450	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	21.7	790	830	1.8	19.7	480	520	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	24.1	970	1020	2.0	22.4	630	680	1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	26.9	1150	1220	2.0	25.3	760	830	1000
1.5	12	0.44	0.3	4.0 x 0.8	1.40	27.8	1260	1340	2.0	26.1	870	960	1000
1.5	14	0.44	0.3	4.0 x 0.8	1.40	29.1	1400	1500	2.0	27.4	990	1090	1000
1.5	16	0.44	0.3	4.0 x 0.8	1.40	30.6	1550	1660	2.0	28.9	1110	1220	500/1000
1.5	19	0.44	0.3	4.0 x 0.8	1.40	32.1	1740	1880	2.0	30.5	1280	1410	500/1000
1.5	20	0.44	0.3	4.0 x 0.8	1.56	34.2	1860	2000	2.0	32.2	1350	1490	500/1000
1.5	24	0.44	0.4	4.0 x 0.8	1.56	37.9	2200	2370	2.2	36.2	1630	1800	500
1.5	30	0.44	0.4	4.0 x 0.8	1.56	40.0	2560	2770	2.2	38.3	1960	2170	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	43.1	3010	3260	2.2	41.4	2360	2620	500
2.5	1	0.53	0.3	0.9	1.24	13.2	335	345	1.8	11.4	175	185	1000
2.5	2	0.53	0.3	0.9	1.24	18.6	550	570	1.8	16.7	305	325	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	21.4	800	840	1.8	19.4	495	530	1000
2.5	5	0.53	0.3	0.4 x 0.8	1.40	23.2	920	970	2.0	21.6	610	660	1000
2.5	6	0.53	0.3	0.4 x 0.8	1.40	25.1	1080	1140	2.0	23.5	710	770	1000
2.5	8	0.53	0.3	0.4 x 0.8	1.40	28.0	1320	1400	2.0	26.3	910	980	1000
2.5	10	0.53	0.3	0.4 x 0.8	1.40	31.5	1570	1670	2.0	29.8	1100	1200	500/1000
2.5	12	0.53	0.3	0.4 x 0.8	1.56	32.8	1760	1880	2.0	30.8	1280	1400	500/1000
2.5	14	0.53	0.3	0.4 x 0.8	1.56	34.4	1990	2130	2.0	32.4	1460	1600	500/1000
2.5	16	0.53	0.4	0.4 x 0.8	1.56	36.4	2220	2380	2.2	34.7	1670	1830	500
2.5	19	0.53	0.4	0.4 x 0.8	1.56	38.3	2510	2700	2.2	36.6	1940	2130	500
2.5	20	0.53	0.4	0.4 x 0.8	1.56	40.4	2640	2840	2.2	38.7	2040	2240	500
2.5	24	0.53	0.4	0.4 x 0.8	1.72	45.0	3130	3370	2.2	42.9	2420	2650	500
2.5	30	0.53	0.5	0.4 x 0.8	1.72	47.8	3720	4020	2.4	46.0	2980	3280	500
2.5	37	0.53	0.5	0.4 x 0.8	1.88	51.9	4430	4800	2.4	49.7	3590	3960	500

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300/500 VOLTS, MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	0.3	0.9	1.24	13.9	310	320	1.8	12.0	140	150	1000
0.5	4	0.44	0.3	0.9	1.24	15.6	400	410	1.8	13.7	200	215	1000
0.5	5	0.44	0.3	0.9	1.24	16.7	445	460	1.8	14.8	230	250	1000
0.5	6	0.44	0.3	0.9	1.24	17.9	495	510	1.8	16.0	265	285	1000
0.5	8	0.44	0.3	0.9	1.24	19.7	580	610	1.8	17.8	325	350	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	22.0	720	750	1.8	20.0	390	420	1000
0.5	12	0.44	0.3	4.0 x 0.8	1.40	22.7	770	810	1.8	20.6	435	475	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	24.8	930	980	2.0	23.2	570	620	1000
0.5	18	0.44	0.3	4.0 x 0.8	1.40	26.0	990	1040	2.0	24.4	620	680	1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	26.0	1010	1070	2.0	24.4	640	700	1000
0.5	20	0.44	0.3	4.0 x 0.8	1.40	27.3	1070	1130	2.0	25.7	680	740	1000
0.5	24	0.44	0.3	4.0 x 0.8	1.40	30.3	1230	1310	2.0	28.4	790	870	500/1000
0.5	30	0.44	0.3	4.0 x 0.8	1.40	31.6	1400	1500	2.0	30.0	940	1030	500/1000
0.5	37	0.44	0.3	4.0 x 0.8	1.56	34.3	1630	1740	2.0	32.4	1110	1230	500/1000
0.75	2	0.44	0.3	0.9	1.24	14.6	340	350	1.8	12.7	160	165	1000
0.75	4	0.44	0.3	0.9	1.24	16.5	440	455	1.8	14.6	230	245	1000
0.75	5	0.44	0.3	0.9	1.24	17.7	500	520	1.8	15.8	270	290	1000
0.75	6	0.44	0.3	0.9	1.24	19.0	560	580	1.8	17.1	310	330	1000
0.75	8	0.44	0.3	4.0 x 0.8	1.40	21.1	690	720	1.8	19.1	385	410	1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	23.5	820	860	2.0	21.9	480	520	1000
0.75	12	0.44	0.3	4.0 x 0.8	1.40	24.2	880	920	2.0	22.6	540	590	1000
0.75	16	0.44	0.3	4.0 x 0.8	1.40	26.6	1060	1120	2.0	25.0	680	730	1000
0.75	18	0.44	0.3	4.0 x 0.8	1.40	27.9	1130	1200	2.0	26.3	740	810	1000
0.75	19	0.44	0.3	4.0 x 0.8	1.40	27.9	1160	1230	2.0	26.3	770	840	1000
0.75	20	0.44	0.3	4.0 x 0.8	1.40	29.3	1230	1300	2.0	27.7	810	890	1000
0.75	24	0.44	0.3	4.0 x 0.8	1.56	32.5	1440	1530	2.0	30.6	950	1040	500/1000
0.75	30	0.44	0.3	4.0 x 0.8	1.56	34.3	1670	1780	2.0	32.4	1130	1240	500/1000
0.75	37	0.44	0.4	4.0 x 0.8	1.56	37.1	1930	2070	2.2	35.4	1390	1520	500
1.0	2	0.44	0.3	0.9	1.24	15.3	370	380	1.8	13.4	180	185	1000
1.0	4	0.44	0.3	0.9	1.24	17.2	485	500	1.8	15.4	265	280	1000
1.0	5	0.44	0.3	0.9	1.24	18.5	550	570	1.8	16.7	310	330	1000
1.0	6	0.44	0.3	0.9	1.24	20.0	620	640	1.8	18.1	355	380	1000
1.0	8	0.44	0.3	4.0 x 0.8	1.40	22.2	780	810	1.8	20.2	440	475	1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	24.8	890	930	2.0	23.2	560	600	1000
1.0	12	0.44	0.3	4.0 x 0.8	1.40	25.5	990	1040	2.0	23.9	630	680	1000
1.0	16	0.44	0.3	4.0 x 0.8	1.40	28.1	1200	1270	2.0	26.5	790	850	1000

300/500 VOLTS, MULTI PAIR, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insula-tion	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm²		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	18	0.44	0.3	4.0 x 0.8	1.40	29.5	1310	1380	2.0	27.9	870	940	1000
1.0	19	0.44	0.3	4.0 x 0.8	1.40	29.5	1340	1420	2.0	27.9	900	980	1000
1.0	20	0.44	0.3	4.0 x 0.8	1.40	31.0	1420	1500	2.0	29.4	950	1030	500/1000
1.0	24	0.44	0.3	4.0 x 0.8	1.56	34.5	1660	1750	2.0	32.5	1120	1220	500/1000
1.0	30	0.44	0.4	4.0 x 0.8	1.56	36.6	1920	2040	2.2	34.9	1370	1490	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	39.4	2240	2380	2.2	37.7	1640	1790	500
1.5	2	0.44	0.3	0.9	1.24	16.3	415	425	1.8	14.5	210	215	1000
1.5	4	0.44	0.3	0.9	1.24	18.5	560	580	1.8	16.6	315	335	1000
1.5	5	0.44	0.3	4.0 x 0.8	1.24	19.8	640	660	1.8	18.1	370	395	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	21.7	740	770	1.8	19.7	430	460	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	24.1	900	940	2.0	22.4	560	600	1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	26.9	1070	1110	2.0	25.3	680	720	1000
1.5	12	0.44	0.3	4.0 x 0.8	1.40	27.8	1160	1220	2.0	26.1	770	830	1000
1.5	16	0.44	0.3	4.0 x 0.8	1.40	30.6	1410	1490	2.0	29.0	980	1050	500/1000
1.5	18	0.44	0.3	4.0 x 0.8	1.40	32.1	1540	1620	2.0	30.5	1080	1160	500/1000
1.5	19	0.44	0.3	4.0 x 0.8	1.40	32.1	1580	1670	2.0	30.5	1120	1210	500/1000
1.5	20	0.44	0.3	4.0 x 0.8	1.56	34.2	1700	1790	2.0	32.2	1180	1280	500/1000
1.5	24	0.44	0.4	4.0 x 0.8	1.56	37.9	2000	2110	2.2	36.2	1430	1540	500
1.5	30	0.44	0.4	4.0 x 0.8	1.56	40.0	2310	2450	2.2	38.3	1710	1850	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	43.1	2700	2870	2.2	41.4	2050	2220	500
2.5	2	0.53	0.3	0.9	1.24	18.5	510	520	1.8	16.6	270	285	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	21.3	730	760	1.8	19.3	425	450	1000
2.5	5	0.53	0.3	0.4 x 0.8	1.40	23.1	840	870	2.0	21.5	520	560	1000
2.5	6	0.53	0.3	0.4 x 0.8	1.40	25.0	970	1010	2.0	23.3	610	650	1000
2.5	8	0.53	0.3	0.4 x 0.8	1.40	27.8	1150	1210	2.0	26.2	770	820	1000
2.5	10	0.53	0.3	0.4 x 0.8	1.40	31.3	1390	1460	2.0	29.6	930	1000	500/1000
2.5	12	0.53	0.3	0.4 x 0.8	1.56	32.6	1550	1630	2.0	30.7	1070	1150	500/1000
2.5	16	0.53	0.4	0.4 x 0.8	1.56	36.2	1940	2050	2.2	34.5	1390	1500	500
2.5	18	0.53	0.4	0.4 x 0.8	1.56	38.1	2110	2230	2.2	36.4	1540	1660	500
2.5	19	0.53	0.4	0.4 x 0.8	1.56	38.1	2180	2300	2.2	36.4	1610	1730	500
2.5	20	0.53	0.4	0.4 x 0.8	1.56	40.2	2290	2420	2.2	38.5	1690	1830	500
2.5	24	0.53	0.4	0.4 x 0.8	1.72	44.7	2710	2870	2.2	42.7	2000	2160	500
2.5	30	0.53	0.5	0.4 x 0.8	1.72	47.5	3200	3400	2.4	45.7	2460	2660	500
2.5	37	0.53	0.5	0.4 x 0.8	1.88	51.6	3780	4030	2.4	49.4	2950	3200	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300/500 VOLTS, MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	0.3	0.9	1.24	15.0	355	360	1.8	13.1	165	175	1000
0.5	4	0.44	0.3	0.9	1.24	16.9	455	475	1.8	15.0	240	260	1000
0.5	5	0.44	0.3	0.9	1.24	18.1	520	540	1.8	16.3	280	305	1000
0.5	6	0.44	0.3	0.9	1.24	19.5	580	610	1.8	17.6	325	350	1000
0.5	8	0.44	0.3	4.0 x 0.8	1.40	21.7	710	750	1.8	19.7	400	440	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	24.2	840	890	2.0	22.6	500	550	1000
0.5	12	0.44	0.3	4.0 x 0.8	1.40	24.9	930	990	2.0	23.3	570	620	1000
0.5	14	0.44	0.3	4.0 x 0.8	1.40	26.1	1000	1070	2.0	24.4	640	700	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	27.4	1100	1170	2.0	25.8	710	780	1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	28.7	1220	1310	2.0	27.1	810	900	1000
0.5	20	0.44	0.3	4.0 x 0.8	1.40	30.2	1290	1380	2.0	28.6	850	950	500/1000
0.5	24	0.44	0.3	4.0 x 0.8	1.56	33.6	1510	1620	2.0	31.6	1000	1110	500/1000
0.5	30	0.44	0.4	4.0 x 0.8	1.56	35.6	1740	1890	2.2	33.9	1220	1360	500/1000
0.5	37	0.44	0.4	4.0 x 0.8	1.56	38.3	2020	2200	2.2	36.6	1450	1630	500
0.75	2	0.44	0.3	0.9	1.24	15.8	390	400	1.8	13.9	190	200	1000
0.75	4	0.44	0.3	0.9	1.24	17.9	510	540	1.8	16.0	285	305	1000
0.75	5	0.44	0.3	0.9	1.24	19.3	590	610	1.8	17.4	335	360	1000
0.75	6	0.44	0.3	4.0 x 0.8	1.40	20.9	690	730	1.8	18.9	385	420	1000
0.75	8	0.44	0.3	4.0 x 0.8	1.40	23.2	810	860	2.0	21.5	500	550	1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	25.9	970	1020	2.0	24.3	600	660	1000
0.75	12	0.44	0.3	4.0 x 0.8	1.40	26.7	1070	1140	2.0	25.1	690	750	1000
0.75	14	0.44	0.3	4.0 x 0.8	1.40	27.9	1190	1260	2.0	26.3	770	850	1000
0.75	16	0.44	0.3	4.0 x 0.8	1.40	29.4	1280	1360	2.0	27.7	860	950	1000
0.75	19	0.44	0.3	4.0 x 0.8	1.40	30.8	1430	1530	2.0	29.2	990	1090	500/1000
0.75	20	0.44	0.3	4.0 x 0.8	1.56	32.8	1530	1640	2.0	30.9	1040	1150	500/1000
0.75	24	0.44	0.4	4.0 x 0.8	1.56	36.3	1810	1940	2.2	34.6	1260	1390	500
0.75	30	0.44	0.4	4.0 x 0.8	1.56	38.3	2080	2240	2.2	36.6	1510	1670	500
0.75	37	0.44	0.4	4.0 x 0.8	1.56	41.3	2420	2620	2.2	39.6	1800	2000	500
1.0	2	0.44	0.3	0.9	1.24	16.5	425	435	1.8	14.7	215	230	1000
1.0	4	0.44	0.3	0.9	1.24	18.8	580	600	1.8	16.9	330	355	1000
1.0	5	0.44	0.3	0.9	1.24	20.3	660	690	1.8	18.4	390	420	1000
1.0	6	0.44	0.3	4.0 x 0.8	1.40	22.0	780	820	1.8	20.0	450	485	1000
1.0	8	0.44	0.3	4.0 x 0.8	1.40	24.4	930	970	2.0	22.8	590	640	1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	27.4	1100	1160	2.0	25.7	710	770	1000
1.0	12	0.44	0.3	4.0 x 0.8	1.40	28.2	1230	1300	2.0	26.6	810	880	1000
1.0	14	0.44	0.3	4.0 x 0.8	1.40	29.5	1360	1440	2.0	27.9	920	1000	1000

300/500 VOLTS, MULTI TRIAD, STR. COPPER, PVC/PE INSULATED ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - PE insulation	Approx. weight of cable - PVC insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	0.3	4.0 x 0.8	1.40	31.1	1490	1590	2.0	29.5	1030	1120	500/1000
1.0	19	0.44	0.3	4.0 x 0.8	1.40	32.7	1670	1780	2.0	31.1	1180	1290	500/1000
1.0	20	0.44	0.3	4.0 x 0.8	1.56	34.7	1780	1900	2.0	32.8	1250	1370	500/1000
1.0	24	0.44	0.4	4.0 x 0.8	1.56	38.5	2080	2220	2.2	36.8	1500	1650	500
1.0	30	0.44	0.4	4.0 x 0.8	1.56	40.7	2430	2610	2.2	39.0	1800	1980	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	43.8	2840	3060	2.2	42.1	2160	2390	500
1.5	2	0.44	0.3	0.9	1.24	17.8	485	500	1.8	15.9	255	270	1000
1.5	4	0.44	0.3	4.0 x 0.8	1.24	20.1	690	720	1.8	18.4	400	430	1000
1.5	5	0.44	0.3	4.0 x 0.8	1.40	22.1	810	850	1.8	20.0	480	510	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	23.9	920	960	2.0	22.2	580	620	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	26.5	1120	1170	2.0	24.9	730	780	1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	29.8	1320	1390	2.0	28.2	880	950	500/1000
1.5	12	0.44	0.3	4.0 x 0.8	1.40	30.7	1450	1540	2.0	29.1	1010	1100	500/1000
1.5	14	0.44	0.3	4.0 x 0.8	1.56	32.5	1640	1740	2.0	30.6	1150	1250	500/1000
1.5	16	0.44	0.3	4.0 x 0.8	1.56	34.2	1800	1920	2.0	32.3	1290	1400	500/1000
1.5	19	0.44	0.4	4.0 x 0.8	1.56	36.2	2070	2200	2.2	34.5	1530	1660	500
1.5	20	0.44	0.4	4.0 x 0.8	1.56	38.2	2180	2320	2.2	36.5	1610	1750	500
1.5	24	0.44	0.4	4.0 x 0.8	1.56	42.2	2550	2710	2.2	40.5	1900	2060	500
1.5	30	0.44	0.4	4.0 x 0.8	1.72	45.0	3000	3210	2.2	42.9	2290	2500	500
1.5	37	0.44	0.5	4.0 x 0.8	1.72	48.7	3570	3830	2.4	46.8	2800	3060	500
2.5	2	0.53	0.3	4.0 x 0.8	1.40	20.4	650	670	1.8	18.3	340	360	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	23.4	910	950	2.0	21.8	570	610	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	25.4	1050	1100	2.0	23.8	690	740	1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	27.5	1190	1250	2.0	25.9	800	860	1000
2.5	8	0.53	0.3	4.0 x 0.8	1.40	30.8	1450	1530	2.0	29.2	1020	1100	500/1000
2.5	10	0.53	0.4	4.0 x 0.8	1.56	35.2	1790	1890	2.2	33.5	1270	1370	500/1000
2.5	12	0.53	0.4	4.0 x 0.8	1.56	36.4	2020	2140	2.2	34.7	1470	1590	500
2.5	14	0.53	0.4	4.0 x 0.8	1.56	38.2	2240	2380	2.2	36.5	1670	1810	500
2.5	16	0.53	0.4	4.0 x 0.8	1.56	40.2	2480	2640	2.2	38.5	1880	2040	500
2.5	19	0.53	0.4	4.0 x 0.8	1.56	42.4	2830	3010	2.2	40.7	2180	2370	500
2.5	20	0.53	0.4	4.0 x 0.8	1.72	45.1	3010	3210	2.2	43.0	2300	2500	500
2.5	24	0.53	0.5	4.0 x 0.8	1.88	50.5	3600	3840	2.4	48.3	2760	3000	500
2.5	30	0.53	0.5	4.0 x 0.8	1.88	53.4	4210	4510	2.6	51.6	3400	3700	500
2.5	37	0.53	0.5	4.0 x 0.8	2.04	57.9	5020	5390	2.6	55.8	4100	4470	400

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

POLYCAB
Connection Zindagi Ka

300/500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.3	0.9	1.24	12.5	255	255	1.8	10.6	110	105	1000
0.5	2	0.44	0.3	0.9	1.24	16.3	375	370	1.8	14.5	170	165	1000
0.5	4	0.44	0.3	0.9	1.24	18.4	475	465	1.8	16.5	235	225	1000
0.5	5	0.44	0.3	0.9	1.24	19.8	530	520	1.8	17.9	270	260	1000
0.5	6	0.44	0.3	0.9	1.24	21.3	590	580	1.8	19.4	310	295	1000
0.5	8	0.44	0.3	0.9	1.24	23.5	700	680	1.8	21.7	375	355	1000
0.5	10	0.44	0.3	0.9	1.24	26.3	820	790	1.8	24.4	450	425	1000
0.5	12	0.44	0.3	0.9	1.24	27.1	880	850	1.8	25.2	500	475	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	29.9	1090	1050	1.8	27.9	620	580	1000
0.5	18	0.44	0.3	4.0 x 0.8	1.40	31.4	1170	1130	1.8	29.4	680	640	1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	31.4	1200	1150	1.8	29.4	700	660	1000
0.5	20	0.44	0.3	4.0 x 0.8	1.40	33.0	1260	1220	2.0	31.4	770	730	1000
0.5	24	0.44	0.3	4.0 x 0.8	1.40	36.4	1400	1390	2.0	34.8	900	850	1000
0.5	30	0.44	0.3	4.0 x 0.8	1.40	38.4	1630	1560	2.0	36.8	1060	990	1000
0.5	37	0.44	0.3	4.0 x 0.8	1.4	41.3	1870	1780	2.0	39.7	1260	1170	500/1000
0.75	1	0.44	0.3	0.9	1.24	12.9	270	270	1.8	11.0	120	115	1000
0.75	2	0.44	0.3	0.9	1.24	17.0	405	400	1.8	15.1	185	180	1000
0.75	4	0.44	0.3	0.9	1.24	19.3	520	510	1.8	17.4	265	255	1000
0.75	5	0.44	0.3	0.9	1.24	20.7	590	580	1.8	18.9	310	300	1000
0.75	6	0.44	0.3	0.9	1.24	22.3	660	640	1.8	20.5	355	340	1000
0.75	8	0.44	0.3	0.9	1.24	24.7	780	760	1.8	22.8	435	415	1000
0.75	10	0.44	0.3	4.0 X 0.8	1.40	27.8	940	910	1.8	25.8	520	500	1000
0.75	12	0.44	0.3	4.0 X 0.8	1.40	28.7	1030	1000	1.8	26.6	590	560	1000
0.75	16	0.44	0.3	4.0 X 0.8	1.40	31.5	1230	1190	2.0	29.9	760	720	1000
0.75	18	0.44	0.3	4.0 X 0.8	1.40	33.1	1330	1280	2.0	31.5	840	790	1000
0.75	19	0.44	0.3	4.0 X 0.8	1.40	33.1	1360	1310	2.0	31.5	870	820	1000
0.75	20	0.44	0.3	4.0 X 0.8	1.40	34.9	1430	1380	2.0	33.3	920	870	1000
0.75	24	0.44	0.3	4.0 X 0.8	1.40	38.4	1640	1570	2.0	36.8	1070	1010	1000
0.75	30	0.44	0.3	4.0 X 0.8	1.40	40.6	1890	1810	2.0	39.0	1270	1200	500/1000
0.75	37	0.44	0.3	4.0 X 0.8	1.4	43.8	2170	2080	2.0	42.1	1510	1420	500/1000
1.0	1	0.44	0.3	0.9	1.24	13.2	290	285	1.8	11.4	130	125	1000
1.0	2	0.44	0.3	0.9	1.24	17.6	430	425	1.8	15.7	205	200	1000
1.0	4	0.44	0.3	0.9	1.24	20.0	560	550	1.8	18.1	300	290	1000
1.0	5	0.44	0.3	0.9	1.24	21.5	640	630	1.8	19.7	350	335	1000
1.0	6	0.44	0.3	0.9	1.24	23.2	720	700	1.8	21.3	405	385	1000
1.0	8	0.44	0.3	0.9	1.24	25.7	850	830	1.8	23.9	500	475	1000
1.0	10	0.44	0.3	4.0 X 0.8	1.40	29.0	1040	1010	1.8	27.0	600	570	1000
1.0	12	0.44	0.3	4.0 X 0.8	1.40	29.9	1150	1110	1.8	27.8	680	650	1000
1.0	16	0.44	0.3	4.0 X 0.8	1.40	32.9	1370	1330	2.0	31.3	880	840	1000

300/500 VOLTS, SINGLE AND MULTI PAIR, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	18	0.44	0.3	4.0 x 0.8	1.40	34.6	1490	1440	2.0	33.0	970	920	1000
1.0	19	0.44	0.3	4.0 x 0.8	1.40	34.6	1520	1470	2.0	33.0	1010	960	1000
1.0	20	0.44	0.3	4.0 x 0.8	1.40	36.4	1600	1550	2.0	34.8	1060	1010	1000
1.0	24	0.44	0.4	4.0 x 0.8	1.40	40.2	1860	1800	2.0	38.6	1250	1180	500/1000
1.0	30	0.44	0.3	4.0 x 0.8	1.40	42.5	2130	2040	2.0	40.9	1490	1410	500/1000
1.0	37	0.44	0.3	4.0 x 0.8	1.56	46.1	2490	2390	2.0	44.2	1770	1670	500/1000
1.5	1	0.44	0.3	0.9	1.24	13.8	315	310	1.8	12.0	145	140	1000
1.5	2	0.44	0.3	0.9	1.24	18.6	475	470	1.8	16.7	235	230	1000
1.5	4	0.44	0.3	0.9	1.24	21.2	640	630	1.8	19.3	355	340	1000
1.5	5	0.44	0.3	0.9	1.24	22.9	730	710	1.8	21.0	415	400	1000
1.5	6	0.44	0.3	0.9	1.24	24.7	820	800	1.8	22.8	480	460	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	27.6	1010	990	1.8	25.6	600	580	1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	31.0	1190	1160	2.0	29.3	750	720	1000
1.5	12	0.44	0.3	4.0 x 0.8	1.40	31.9	1320	1280	2.0	30.3	860	820	1000
1.5	16	0.44	0.3	4.0 x 0.8	1.40	35.2	1590	1540	2.0	33.6	1080	1030	1000
1.5	18	0.44	0.3	4.0 x 0.8	1.40	37.1	1730	1670	2.0	35.4	1190	1130	1000
1.5	19	0.44	0.3	4.0 x 0.8	1.40	37.1	1770	1720	2.0	35.4	1240	1180	1000
1.5	20	0.44	0.3	4.0 x 0.8	1.40	39.1	1890	1830	2.0	37.5	1300	1240	500/1000
1.5	24	0.44	0.3	4.0 x 0.8	1.56	43.5	2200	2130	2.0	41.5	1530	1460	500/1000
1.5	30	0.44	0.3	4.0 x 0.8	1.56	46.0	2560	2470	2.0	44.0	1840	1750	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	49.8	3020	2910	2.2	48.1	2250	2140	500
2.5	1	0.53	0.3	0.9	1.24	15.1	365	360	1.8	13.2	180	175	1000
2.5	2	0.53	0.3	0.9	1.24	20.6	570	570	1.8	18.7	300	290	1000
2.5	4	0.53	0.3	0.9	1.24	23.6	790	770	1.8	21.7	465	450	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	25.7	940	920	1.8	23.7	550	530	1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	27.9	1060	1030	1.8	25.8	640	620	1000
2.5	8	0.53	0.3	4.0 x 0.8	1.40	31.1	1300	1270	2.0	29.4	840	810	1000
2.5	10	0.53	0.3	4.0 x 0.8	1.40	35.0	1530	1490	2.0	33.3	1020	980	1000
2.5	12	0.53	0.3	4.0 x 0.8	1.40	36.1	1710	1660	2.0	34.5	1170	1120	1000
2.5	16	0.53	0.3	4.0 x 0.8	1.56	40.2	2100	2040	2.0	38.3	1480	1420	500/1000
2.5	18	0.53	0.3	4.0 x 0.8	1.56	42.4	2310	2240	2.0	40.4	1650	1570	500/1000
2.5	19	0.53	0.3	4.0 x 0.8	1.56	42.4	2380	2310	2.0	40.4	1710	1640	500/1000
2.5	20	0.53	0.4	4.0 x 0.8	1.56	44.9	2520	2440	2.2	43.2	1850	1770	500
2.5	24	0.53	0.4	4.0 x 0.8	1.56	49.7	2930	2830	2.2	48.0	2180	2080	500
2.5	30	0.53	0.4	4.0 x 0.8	1.56	52.6	3430	3310	2.2	50.9	2630	2510	500
2.5	37	0.53	0.4	4.0 x 0.8	1.72	57.1	4080	3930	2.2	55.1	3160	3010	500

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

POLYCAB
Connection Zindagi Ka

300/500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	1	0.44	0.3	0.9	1.24	12.9	280	275	1.8	11.1	125	120	1000
0.5	2	0.44	0.3	0.9	1.24	17.7	435	430	1.8	15.8	205	195	1000
0.5	4	0.44	0.3	0.9	1.24	20.1	570	550	1.8	18.2	295	285	1000
0.5	5	0.44	0.3	0.9	1.24	21.7	640	620	1.8	19.8	345	330	1000
0.5	6	0.44	0.3	0.9	1.24	23.4	720	690	1.8	21.5	400	375	1000
0.5	8	0.44	0.3	0.9	1.24	25.9	850	820	1.8	24.0	490	465	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	29.2	1030	1000	1.8	27.1	590	560	1000
0.5	12	0.44	0.3	4.0 x 0.8	1.40	30.1	1140	1090	1.8	28.0	670	630	1000
0.5	14	0.44	0.3	4.0 x 0.8	1.40	31.5	1250	1200	1.8	29.5	750	700	500/1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	33.1	1360	1300	2.0	31.5	870	810	500/1000
0.5	19	0.44	0.3	4.0 x 0.8	1.40	34.8	1500	1440	2.0	33.2	990	920	500
0.5	20	0.44	0.3	4.0 x 0.8	1.40	36.7	1580	1510	2.0	35.1	1050	980	500
0.5	24	0.44	0.3	4.0 x 0.8	1.40	40.5	1840	1750	2.0	38.9	1220	1140	500
0.5	30	0.44	0.3	4.0 x 0.8	1.40	42.8	2100	1990	2.0	41.2	1460	1350	500
0.5	37	0.44	0.3	4.0 x 0.8	1.56	46.5	2460	2330	2.0	44.5	1740	1610	500
0.75	1	0.44	0.3	0.9	1.24	13.4	300	295	1.8	11.5	140	135	1000
0.75	2	0.44	0.3	0.9	1.24	18.5	470	465	1.8	16.6	230	225	1000
0.75	4	0.44	0.3	0.9	1.24	21.0	620	610	1.8	19.2	345	330	1000
0.75	5	0.44	0.3	0.9	1.24	22.7	710	690	1.8	20.9	405	385	1000
0.75	6	0.44	0.3	0.9	1.24	24.6	800	780	1.8	22.7	465	440	1000
0.75	8	0.44	0.3	4.0 X 0.8	1.24	27.1	970	940	1.8	25.4	580	550	1000
0.75	10	0.44	0.3	4.0 X 0.8	1.40	30.8	1170	1130	1.8	28.7	700	660	500/1000
0.75	12	0.44	0.3	4.0 X 0.8	1.40	31.7	1290	1240	2.0	30.1	830	780	500/1000
0.75	14	0.44	0.3	4.0 X 0.8	1.40	33.3	1420	1360	2.0	31.6	930	880	500/1000
0.75	16	0.44	0.3	4.0 X 0.8	1.40	35.0	1550	1490	2.0	33.4	1040	980	500
0.75	19	0.44	0.3	4.0 X 0.8	1.40	36.8	1730	1650	2.0	35.2	1190	1120	500
0.75	20	0.44	0.3	4.0 X 0.8	1.40	38.8	1840	1770	2.0	37.2	1250	1180	500
0.75	24	0.44	0.3	4.0 X 0.8	1.40	42.9	2110	2020	2.0	41.3	1470	1380	500
0.75	30	0.44	0.3	4.0 X 0.8	1.56	45.7	2480	2370	2.0	43.7	1760	1650	500
0.75	37	0.44	0.4	4.0 X 0.8	1.56	49.4	2910	2770	2.2	47.7	2160	2020	500
1.0	1	0.44	0.3	0.9	1.24	13.8	315	310	1.8	11.9	150	145	1000
1.0	2	0.44	0.3	0.9	1.24	19.2	510	500	1.8	17.3	255	250	1000
1.0	4	0.44	0.3	0.9	1.24	21.9	690	670	1.8	20.0	390	375	1000
1.0	5	0.44	0.3	0.9	1.24	23.7	780	760	1.8	21.8	460	440	1000
1.0	6	0.44	0.3	0.9	1.24	25.6	890	860	1.8	23.7	530	510	1000
1.0	8	0.44	0.3	4.0 X 0.8	1.40	28.6	1110	1080	1.8	26.6	670	640	1000
1.0	10	0.44	0.3	4.0 X 0.8	1.40	32.1	1300	1260	2.0	30.5	840	800	500/1000
1.0	12	0.44	0.3	4.0 X 0.8	1.40	33.1	1450	1400	2.0	31.5	960	910	500/1000
1.0	14	0.44	0.3	4.0 X 0.8	1.40	34.7	1600	1540	2.0	33.1	1080	1030	500

300/500 VOLTS, SINGLE AND MULTI TRIAD, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED ALUMINIUM MYLAR TAPED OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	0.3	4.0 x 0.8	1.40	36.6	1750	1680	2.0	35.0	1210	1140	500
1.0	19	0.44	0.3	4.0 x 0.8	1.40	38.5	1960	1880	2.0	36.9	1390	1310	500
1.0	20	0.44	0.3	4.0 x 0.8	1.40	40.6	2080	2000	2.0	39.0	1470	1390	500
1.0	24	0.44	0.3	4.0 x 0.8	1.40	44.9	2420	2320	2.0	43.3	1730	1630	500
1.0	30	0.44	0.3	4.0 x 0.8	1.56	47.8	2830	2700	2.0	45.9	2080	1960	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	51.8	3350	3190	2.2	50.1	2550	2390	500
1.5	1	0.44	0.3	0.9	1.24	14.4	350	345	1.8	12.6	175	170	1000
1.5	2	0.44	0.3	0.9	1.24	20.3	570	560	1.8	18.4	300	290	1000
1.5	4	0.44	0.3	0.9	1.24	23.2	780	770	1.8	21.3	465	450	1000
1.5	5	0.44	0.3	0.9	1.24	25.2	900	880	1.8	23.3	550	530	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	27.4	1060	1030	1.8	25.4	640	620	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	30.5	1280	1240	2.0	28.9	840	810	500/1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	34.4	1530	1490	2.0	32.8	1020	980	500
1.5	12	0.44	0.3	4.0 x 0.8	1.40	35.5	1690	1630	2.0	33.9	1170	1120	500
1.5	14	0.44	0.3	4.0 x 0.8	1.40	37.2	1890	1830	2.0	35.6	1330	1270	500
1.5	16	0.44	0.3	4.0 x 0.8	1.40	39.2	2080	2010	2.0	37.6	1490	1420	500
1.5	19	0.44	0.3	4.0 x 0.8	1.40	41.3	2340	2250	2.0	39.7	1720	1640	500
1.5	20	0.44	0.3	4.0 x 0.8	1.56	43.9	2510	2420	2.0	42.0	1820	1730	500
1.5	24	0.44	0.4	4.0 x 0.8	1.56	48.8	2940	2830	2.2	47.1	2190	2080	500
1.5	30	0.44	0.4	4.0 x 0.8	1.56	51.6	3440	3310	2.2	49.9	2640	2510	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	55.7	4030	3860	2.2	54.0	3180	3010	400
2.5	1	0.53	0.3	0.9	1.24	15.7	415	410	1.8	13.9	220	215	1000
2.5	2	0.53	0.3	0.9	1.24	22.6	690	680	1.8	20.7	390	375	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	26.1	1010	990	1.8	24.1	630	600	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	28.4	1190	1160	2.0	26.8	780	750	1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	30.8	1350	1310	2.0	29.2	910	870	500/1000
2.5	8	0.53	0.3	4.0 x 0.8	1.40	34.5	1670	1620	2.0	32.8	1150	1100	500
2.5	10	0.53	0.3	4.0 x 0.8	1.40	38.9	1990	1930	2.0	37.3	1410	1340	500
2.5	12	0.53	0.3	4.0 x 0.8	1.56	40.5	2270	2190	2.0	38.6	1630	1550	500
2.5	14	0.53	0.3	4.0 x 0.8	1.56	42.5	2520	2440	2.0	40.6	1850	1770	500
2.5	16	0.53	0.4	4.0 x 0.8	1.56	45.1	2800	2700	2.2	43.4	2130	2030	500
2.5	19	0.53	0.4	4.0 x 0.8	1.56	47.5	3190	3070	2.2	45.8	2470	2350	500
2.5	20	0.53	0.4	4.0 x 0.8	1.56	50.2	3380	3250	2.2	48.5	2600	2480	500
2.5	24	0.53	0.4	4.0 x 0.8	1.72	55.9	3970	3830	2.2	53.9	3080	2930	400
2.5	30	0.53	0.5	4.0 x 0.8	1.72	59.5	4740	4560	2.4	57.6	3790	3610	400
2.5	37	0.53	0.5	4.0 x 0.8	1.88	64.6	5660	5430	2.4	62.4	4580	4350	400

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300/500 VOLTS, MULTI PAIR, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED, ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	0.3	0.9	1.24	17.7	430	425	1.8	15.8	200	195	1000
0.5	4	0.44	0.3	0.9	1.24	20.1	560	550	1.8	18.2	285	275	1000
0.5	5	0.44	0.3	0.9	1.24	21.6	620	610	1.8	19.8	335	320	1000
0.5	6	0.44	0.3	0.9	1.24	23.3	700	690	1.8	21.5	385	370	1000
0.5	8	0.44	0.3	0.9	1.24	25.9	830	810	1.8	24.0	470	455	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	29.1	1010	980	1.8	27.1	570	540	1000
0.5	12	0.44	0.3	4.0 x 0.8	1.40	30.0	1110	1080	1.8	28.0	640	610	1000
0.5	16	0.44	0.3	4.0 x 0.8	1.40	33.1	1320	1280	2.0	31.5	830	790	500
0.5	18	0.44	0.3	4.0 x 0.8	1.40	34.8	1430	1380	2.0	33.2	910	870	500
0.5	19	0.44	0.3	4.0 x 0.8	1.40	34.8	1460	1410	2.0	33.2	940	900	500
0.5	20	0.44	0.3	4.0 x 0.8	1.40	36.6	1530	1490	2.0	35.0	1000	950	500
0.5	24	0.44	0.3	4.0 x 0.8	1.40	40.4	1780	1720	2.0	38.8	1170	1110	500
0.5	30	0.44	0.3	4.0 x 0.8	1.40	42.7	2020	1950	2.0	41.1	1380	1310	500
0.5	37	0.44	0.3	4.0 x 0.8	1.56	46.4	2370	2280	2.0	44.5	1650	1560	500
0.75	2	0.44	0.3	0.9	1.24	18.4	460	455	1.8	16.6	220	215	1000
0.75	4	0.44	0.3	0.9	1.24	21.0	600	590	1.8	19.1	320	310	1000
0.75	5	0.44	0.3	0.9	1.24	22.6	680	670	1.8	20.8	375	365	1000
0.75	6	0.44	0.3	0.9	1.24	24.5	770	750	1.8	22.6	430	415	1000
0.75	8	0.44	0.3	4.0 x 0.8	1.40	27.3	950	930	1.8	25.3	540	520	1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	30.6	1110	1090	2.0	29.0	670	650	500/1000
0.75	12	0.44	0.3	4.0 x 0.8	1.40	31.6	1230	1190	2.0	30.0	760	730	500/1000
0.75	16	0.44	0.3	4.0 x 0.8	1.40	34.8	1470	1420	2.0	33.2	950	910	1000
0.75	18	0.44	0.3	4.0 x 0.8	1.40	36.6	1590	1540	2.0	35.0	1050	1000	500
0.75	19	0.44	0.3	4.0 x 0.8	1.40	36.6	1630	1580	2.0	35.0	1090	1040	500
0.75	20	0.44	0.3	4.0 x 0.8	1.40	38.6	1710	1660	2.0	37.0	1150	1100	500
0.75	24	0.44	0.3	4.0 x 0.8	1.56	43.0	2010	1950	2.0	41.0	1340	1280	500
0.75	30	0.44	0.3	4.0 x 0.8	1.56	45.4	2330	2250	2.0	43.5	1600	1530	500
0.75	37	0.44	0.4	4.0 x 0.8	1.56	49.2	2710	2620	2.2	47.5	1960	1870	500
1.0	2	0.44	0.3	0.9	1.24	19.1	490	485	1.8	17.2	240	235	1000
1.0	4	0.44	0.3	0.9	1.24	21.7	650	640	1.8	19.9	355	345	1000
1.0	5	0.44	0.3	0.9	1.24	23.5	740	730	1.8	21.6	420	405	1000
1.0	6	0.44	0.3	0.9	1.24	25.4	830	820	1.8	23.5	480	465	1000
1.0	8	0.44	0.3	4.0 x 0.8	1.40	28.4	1040	1020	1.8	26.4	600	580	1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	31.9	1220	1190	2.0	30.3	750	730	500/1000
1.0	12	0.44	0.3	4.0 x 0.8	1.40	32.9	1350	1310	2.0	31.3	860	820	500
1.0	16	0.44	0.3	4.0 x 0.8	1.40	36.3	1610	1570	2.0	34.7	1080	1030	500

300/500 VOLTS, MULTI PAIR, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED, ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of pair	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	18	0.44	0.3	4.0 x 0.8	1.40	38.2	1750	1700	2.0	36.6	1190	1140	500
1.0	19	0.44	0.3	4.0 x 0.8	1.40	38.2	1800	1750	2.0	36.6	1230	1180	500
1.0	20	0.44	0.3	4.0 x 0.8	1.40	40.3	1910	1860	2.0	38.7	1300	1250	500
1.0	24	0.44	0.3	4.0 x 0.8	1.56	44.9	2220	2160	2.0	43.0	1530	1460	500
1.0	30	0.44	0.4	4.0 x 0.8	1.56	47.7	2600	2520	2.2	46.0	1880	1790	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	51.4	3040	2940	2.2	49.7	2240	2140	500
1.5	2	0.44	0.3	0.9	1.24	20.1	540	530	1.8	18.3	270	265	1000
1.5	4	0.44	0.3	0.9	1.24	23.0	720	710	1.8	21.1	410	400	1000
1.5	5	0.44	0.3	4.0 x 0.8	1.24	24.7	850	840	1.8	23.1	485	470	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	27.2	980	960	1.8	25.1	560	550	1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	30.3	1170	1150	2.0	28.6	730	710	500/1000
1.5	10	0.44	0.3	4.0 x 0.8	1.40	34.0	1400	1370	2.0	32.4	890	860	500
1.5	12	0.44	0.3	4.0 x 0.8	1.40	35.1	1530	1490	2.0	33.5	1010	980	500
1.5	16	0.44	0.3	4.0 x 0.8	1.40	38.9	1870	1820	2.0	37.2	1280	1230	500
1.5	18	0.44	0.3	4.0 x 0.8	1.40	40.9	2030	1970	2.0	39.3	1410	1360	500
1.5	19	0.44	0.3	4.0 x 0.8	1.40	40.9	2080	2030	2.0	39.3	1470	1410	500
1.5	20	0.44	0.3	4.0 x 0.8	1.56	43.5	2220	2160	2.0	41.6	1550	1490	500
1.5	24	0.44	0.4	4.0 x 0.8	1.56	48.3	2620	2550	2.2	46.6	1870	1800	500
1.5	30	0.44	0.4	4.0 x 0.8	1.56	51.1	3020	2930	2.2	49.4	2250	2160	500
1.5	37	0.44	0.4	4.0 x 0.8	1.56	55.2	3540	3430	2.2	53.3	2690	2580	400
2.5	2	0.53	0.3	0.9	1.24	22.3	640	630	1.8	20.4	340	330	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	25.8	920	900	1.8	23.8	530	510	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	28.0	1070	1050	2.0	26.4	660	640	1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	30.4	1200	1180	2.0	28.8	760	740	500/1000
2.5	8	0.53	0.3	4.0 x 0.8	1.40	34.0	1450	1420	2.0	32.4	960	930	500
2.5	10	0.53	0.3	4.0 x 0.8	1.40	38.4	1730	1690	2.0	36.8	1170	1130	500
2.5	12	0.53	0.3	4.0 x 0.8	1.56	40.0	1960	1910	2.0	38.0	1340	1290	500
2.5	16	0.53	0.4	4.0 x 0.8	1.56	44.5	2420	2360	2.2	42.8	1750	1680	500
2.5	18	0.53	0.4	4.0 x 0.8	1.56	46.8	2660	2590	2.2	45.1	1940	1860	500
2.5	19	0.53	0.4	4.0 x 0.8	1.56	46.8	2740	2660	2.2	45.1	2020	1940	500
2.5	20	0.53	0.4	4.0 x 0.8	1.56	49.5	2880	2800	2.2	47.8	2130	2050	500
2.5	24	0.53	0.4	4.0 x 0.8	1.72	55.2	3410	3310	2.2	53.1	2510	2410	400
2.5	30	0.53	0.5	4.0 x 0.8	1.72	58.6	4010	3880	2.4	56.8	3080	2960	400
2.5	37	0.53	0.5	4.0 x 0.8	1.88	63.7	4760	4610	2.4	61.5	3700	3550	400

For Cables of sizes or pairs not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

300/500 VOLTS, MULTI TRIAD, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED, ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
0.5	2	0.44	0.3	0.9	1.24	19.2	490	485	1.8	17.3	240	230	1000
0.5	4	0.44	0.3	0.9	1.24	21.9	650	630	1.8	20.0	350	340	1000
0.5	5	0.44	0.3	0.9	1.24	23.7	740	720	1.8	21.8	415	395	1000
0.5	6	0.44	0.3	0.9	1.24	25.6	830	810	1.8	23.8	475	455	1000
0.5	8	0.44	0.3	4.0 x 0.8	1.40	28.7	1030	1000	1.8	26.6	590	560	1000
0.5	10	0.44	0.3	4.0 x 0.8	1.40	32.2	1210	1170	2.0	30.6	750	710	500
0.5	12	0.44	0.3	4.0 x 0.8	1.40	33.2	1330	1290	2.0	31.6	840	800	500
0.5	14	0.44	0.3	4.0 x 0.8	1.40	34.8	1460	1420	2.0	33.2	950	900	500
0.5	16	0.44	0.3	4.0 x 0.8	1.40	36.7	1600	1540	2.0	35.1	1060	1000	500
0.5	19	0.44	0.3	4.0 x 0.8	1.40	38.6	1780	1710	2.0	37.0	1210	1150	500
0.5	20	0.44	0.3	4.0 x 0.8	1.40	40.7	1890	1820	2.0	39.1	1280	1210	500
0.5	24	0.44	0.3	4.0 x 0.8	1.56	45.3	2220	2140	2.0	43.4	1500	1420	500
0.5	30	0.44	0.4	4.0 x 0.8	1.56	48.2	2570	2460	2.2	46.5	1840	1740	500
0.5	37	0.44	0.4	4.0 x 0.8	1.56	51.9	3000	2870	2.2	50.2	2200	2070	500
0.75	2	0.44	0.3	0.9	1.24	20.1	530	530	1.8	18.2	265	260	1000
0.75	4	0.44	0.3	0.9	1.24	23.0	710	700	1.8	21.1	400	385	1000
0.75	5	0.44	0.3	0.9	1.24	24.9	820	800	1.8	23.0	475	455	1000
0.75	6	0.44	0.3	4.0 x 0.8	1.40	27.1	960	940	1.8	25.1	550	520	1000
0.75	8	0.44	0.3	4.0 x 0.8	1.40	30.2	1150	1120	2.0	28.6	710	680	500/1000
0.75	10	0.44	0.3	4.0 x 0.8	1.40	33.9	1350	1310	2.0	32.3	860	820	500
0.75	12	0.44	0.3	4.0 x 0.8	1.40	35.0	1490	1450	2.0	33.4	980	930	500
0.75	14	0.44	0.3	4.0 x 0.8	1.40	36.7	1640	1590	2.0	35.1	1110	1050	500
0.75	16	0.44	0.3	4.0 x 0.8	1.40	38.7	1820	1760	2.0	37.1	1230	1170	500
0.75	19	0.44	0.3	4.0 x 0.8	1.40	40.8	2030	1960	2.0	39.2	1420	1350	500
0.75	20	0.44	0.3	4.0 x 0.8	1.56	43.3	2170	2090	2.0	41.4	1500	1420	500
0.75	24	0.44	0.4	4.0 x 0.8	1.56	48.1	2530	2440	2.2	46.4	1810	1710	500
0.75	30	0.44	0.4	4.0 x 0.8	1.56	50.9	2940	2820	2.2	49.2	2160	2050	500
0.75	37	0.44	0.4	4.0 x 0.8	1.56	55.0	3440	3300	2.2	53.3	2590	2450	500
1.0	2	0.44	0.3	0.9	1.24	20.8	570	560	1.8	18.9	290	285	1000
1.0	4	0.44	0.3	0.9	1.24	23.8	780	760	1.8	22.0	450	435	1000
1.0	5	0.44	0.3	0.9	1.24	25.9	890	870	1.8	24.0	530	510	1000
1.0	6	0.44	0.3	4.0 x 0.8	1.40	28.2	1060	1030	1.8	26.1	620	590	1000
1.0	8	0.44	0.3	4.0 x 0.8	1.40	31.4	1270	1240	2.0	29.8	810	770	500/1000
1.0	10	0.44	0.3	4.0 x 0.8	1.40	35.4	1490	1450	2.0	33.8	980	930	500
1.0	12	0.44	0.3	4.0 x 0.8	1.40	36.6	1650	1610	2.0	34.9	1120	1070	500
1.0	14	0.44	0.3	4.0 x 0.8	1.40	38.4	1830	1770	2.0	36.7	1260	1210	500

300/500 VOLTS, MULTI TRIAD, STR. COPPER, TWO LAYERS OF GLASS MICA TAPES, EPR / SILICONE RUBBER INSULATED, ALUMINIUM MYLAR TAPED INDIVIDUAL AND OVERALL SHIELDED, ARMOURED AND UNARMOURED LOW SMOKE ZERO HALOGEN COMPOUND SHEATHED FIRE SURVIVAL INSTRUMENTATION CABLES GENERALLY AS PER IS

Area of conductor	No of triad	Minimum thickness of insulation	ARMOURED CABLES						UNARMOURED CABLES				Normal Drum Length with ± 5%
			Minimum thickness of inner sheath	Dimension of G.I. armour (wire/strip)	Minimum thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	Nominal thickness of outer sheath	Nominal overall diameter	Approx. weight of cable - Silicone insulation	Approx. weight of cable - EPR insulation	
mm^2		mm	mm	mm	mm	mm	kg/km	kg/km	mm	mm	kg/km	kg/km	m
1.0	16	0.44	0.3	4.0 x 0.8	1.40	40.4	2030	1960	2.0	38.8	1410	1350	500
1.0	19	0.44	0.3	4.0 x 0.8	1.40	42.6	2270	2190	2.0	41.0	1630	1550	500
1.0	20	0.44	0.3	4.0 x 0.8	1.56	45.3	2440	2360	2.0	43.4	1720	1640	500
1.0	24	0.44	0.4	4.0 x 0.8	1.56	50.3	2850	2750	2.2	48.6	2070	1980	500
1.0	30	0.44	0.4	4.0 x 0.8	1.56	53.3	3320	3200	2.2	51.6	2490	2370	500
1.0	37	0.44	0.4	4.0 x 0.8	1.56	57.5	3890	3740	2.2	55.8	2990	2840	400
1.5	2	0.44	0.3	0.9	1.24	22.0	630	620	1.8	20.2	335	330	1000
1.5	4	0.44	0.3	4.0 x 0.8	1.24	25.1	890	880	1.8	23.4	530	510	1000
1.5	5	0.44	0.3	4.0 x 0.8	1.40	27.7	1040	1020	1.8	25.6	630	610	1000
1.5	6	0.44	0.3	4.0 x 0.8	1.40	30.0	1200	1170	2.0	28.4	760	730	500/1000
1.5	8	0.44	0.3	4.0 x 0.8	1.40	33.5	1450	1410	2.0	31.9	960	920	500
1.5	10	0.44	0.3	4.0 x 0.8	1.40	37.8	1730	1680	2.0	36.2	1160	1120	500
1.5	12	0.44	0.3	4.0 x 0.8	1.40	39.1	1930	1870	2.0	37.5	1340	1290	500
1.5	14	0.44	0.3	4.0 x 0.8	1.56	41.3	2160	2100	2.0	39.4	1520	1460	500
1.5	16	0.44	0.3	4.0 x 0.8	1.56	43.6	2400	2330	2.0	41.7	1710	1630	500
1.5	19	0.44	0.4	4.0 x 0.8	1.56	46.2	2710	2630	2.2	44.5	2020	1930	500
1.5	20	0.44	0.4	4.0 x 0.8	1.56	48.7	2870	2780	2.2	47.0	2130	2040	500
1.5	24	0.44	0.4	4.0 x 0.8	1.56	54.0	3330	3230	2.2	52.3	2510	2400	400
1.5	30	0.44	0.4	4.0 x 0.8	1.72	57.6	3950	3820	2.2	55.5	3030	2890	400
1.5	37	0.44	0.5	4.0 x 0.8	1.72	62.4	4680	4510	2.4	60.5	3700	3540	400
2.5	2	0.53	0.3	4.0 x 0.8	1.40	24.7	790	780	1.8	22.6	430	415	1000
2.5	4	0.53	0.3	4.0 x 0.8	1.40	28.5	1140	1110	2.0	26.8	720	700	1000
2.5	5	0.53	0.3	4.0 x 0.8	1.40	31.0	1330	1300	2.0	29.4	860	830	500/1000
2.5	6	0.53	0.3	4.0 x 0.8	1.40	33.7	1500	1460	2.0	32.1	1010	970	500
2.5	8	0.53	0.3	4.0 x 0.8	1.40	37.8	1840	1800	2.0	36.2	1280	1230	500
2.5	10	0.53	0.4	4.0 x 0.8	1.56	43.3	2250	2190	2.2	41.6	1600	1540	500
2.5	12	0.53	0.4	4.0 x 0.8	1.56	44.7	2520	2450	2.2	43.0	1850	1780	500
2.5	14	0.53	0.4	4.0 x 0.8	1.56	47.0	2830	2750	2.2	45.3	2110	2020	500
2.5	16	0.53	0.4	4.0 x 0.8	1.56	49.6	3120	3020	2.2	47.9	2370	2270	500
2.5	19	0.53	0.4	4.0 x 0.8	1.56	52.3	3550	3430	2.2	50.6	2750	2630	500
2.5	20	0.53	0.4	4.0 x 0.8	1.72	55.7	3790	3670	2.2	53.6	2890	2770	400
2.5	24	0.53	0.5	4.0 x 0.8	1.88	62.3	4510	4360	2.4	60.1	3480	3340	400
2.5	30	0.53	0.5	4.0 x 0.8	1.88	66.0	5330	5150	2.6	64.2	4290	4100	400
2.5	37	0.53	0.5	4.0 x 0.8	2.04	71.6	6330	6100	2.6	69.6	5160	4940	400

For Cables of sizes or triads not listed above the product data is available on request
Larger Drum Lenghts are possible against specific requirements on request

• Dimensions & Weights are representative figures and may vary

A typical system to measure temperature in a plant is with thermocouples. This system consists of a sensor (thermocouple), a cable to transmit the signal, and a measuring device, normally in a central control room.

Sensors are made by different materials, and conductors in thermocouple cables must be chosen according to the type of sensors used. The cables connect the measuring junction (normally defined hot junction) to the reference junction (defined cold junction): the difference in temperature between these two points generates an electro motive force (EMF) that is then converted in temperature by a measuring device.

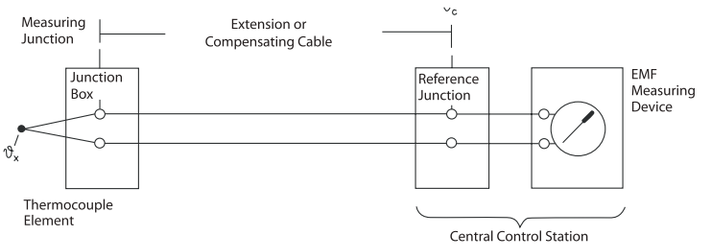
In case the material used for conductors has the same chemical composition as the corresponding thermocouple; the cable is defined Thermocouple extension cable. This is applicable to type J.T and E thermocouple.

In case of costly metals used for thermocouples, less expensive Metals having the same EMF characteristic as that of Thermocouple metals between 0 to100 C are used for connecting the thermocouple to the instruments. These connecting wires are called Thermocouple compensating cables.

The following junctions i.e. Thermocouples have been standardized the world over:

Code	+ve leg	-ve leg	Nominal e.m.f. (microvolts 0°C / 100°C)	Recommended working temp. in celsius	Remarks
K	Chromel (alloy of Chromium & Nickel)	Alumel (alloy of Aluminium & Nickel)	4.10	0°C to 100°C	Most commonly used
T	Copper	Constantan (alloy of Copper & Nickel)	4.28	-185°C to 300°C	For low temp. & cryogenic applications
J	Iron	Constantan	5.27	20°C to 700°C	Used in reducing Atmosphere
E	Chromel	Constantan	6.32	0°C to 800°C	Highest EMF output
R	Platinum +13% Rhodium	Platinum	0.647	0°C to 1600°C	Very high temp. measurements
S	Platinum +10% Rhodium	Platinum	0.645	0°C to 1500°C	Very high temp. measurements
B	Platinum +30% Rhodium	Platinum +6% Rhodium	0.033	100°C to 1500°C	Mainly used in glass industry

Now in a process plant the measuring instrument may be quite far from the thermocouple cable.



CONDUCTOR SIZE FOR EXTENTION WIRES & COMPENSATING CABLES

Today direct measurement of emf is the most popular method and in this case the size of the connecting wires has no bearing on the accuracy of the measurement and hence the size of the conductor is to be chosen keeping in mind the mechanical stability.

Conductor size is selected according to the length of the connection or the presence of Electromagnetic noises: the greater the length or the greater the noises, the largest shall be the size of the conductor.

Standard sizes are 20 AWG (about 0.5 mm^2), 18 AWG (about 1 mm^2) and 16 AWG (about 1.3 mm^2), solid or stranded conductors

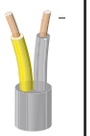
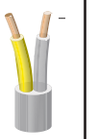
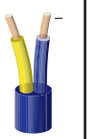
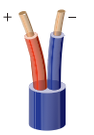
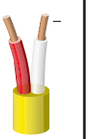
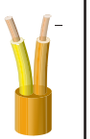
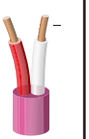
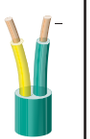
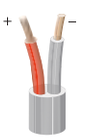
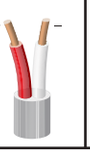
Solid wire construction is recommended for extension wire and compensating cable, as in case of multi strand conductor if there is a slight variation in the composition of the strands, they form their own internal thermocouple and may add to the error.

The adjoining table gives the colour code for extension wires and compensating cables as per different standards adopted by different countries.

In India mostly ANSI (American National Standard Institute) specification MC 96.1 is followed.

Colour Codes for Thermocouple Extension and Compensating Cable

POLYCAB
Connection Zindagi Ka

THERMOCOUPLE	EXTENSION LEAD	COMPENSATING CABLE	+Ve LEG	–Ve LEG	INTERNATIONAL IEC 584.3	BRITISH B. S 1843	AMERICAN ANSI	GERMAN DIN 43714	FRENCH NFC 42324	JAPANESE JIS C 1610	PERMISSIBLE ERROR AS PER ANSI AT 100°C TYPE
K	**KX**		CHROMEL	ALUMEL							± 2.2°C
		KCB	COPPER	CONSTANTAN							
T	**TX**		COPPER	CONSTANTAN							± 1.0°C
J	**JX**		IRON	CONSTANTAN							± 2.2°C
E	**EX**		CHROMEL	CONSTANTAN							± 1.7°C
R		**RCA**	COPPER	CUPRONIC							± 5°C
S		**SCA**	COPPER	CUPRONIC							± 5°C
B		**BC**	COPPER	COPPER							—

The cables which are used in the Power, Control or Signal Circuit of emergency equipment's shall be Fire Resistant to ensure higher safety and performance in the event of fire.

This critical equipment's such as Alarm, Lift Power Supply, Emergency Lights, Exit Lights, Water Spray system and other important functions are connected with these cables.

ADVANTAGES OF POLYCAB FIRE RESISTANT (FIRE SURVIVAL) -FSCABLE WITH LSZH SHEATHING

- Maintains the circuit in operation for few hours to ensure emergency operation in the event of fire.
- Ensures Power availability during fire.
- Can save life and damages in the event of fire.
- Does not emit toxic gases hence safe to human and electronic equipment's
- Low and white smoke does not affect visibility in enclosed areas
- All cable components are non-toxic, having low emission of smoke and acidic nature.

TYPICAL CONSTRUCTION -FIRE RESISTANT/ FIRE SURVIVALCABLES

1. **Conductor:** Annealed Plain / Tinned Copper / Aluminum -IS:8130 / IEC 60228/ BS 6360.
2. **Fire Barrier:** 2 Layers of Glass Mica Tape.
3. **Insulation:** EPR or XLPE or Silicone Rubber.
4. **Fire Barrier Tape:** Glass Fiber Tape over laid up cores.
5. **Inner Sheath:** FRLS / LSZH
6. **Armour:** IS:3975, BS:7846
7. **Outer Sheath:** FRLS PVC ST 2, LSZH

Fire Resistant or Fire Survival Cables shall be with LSZH / LSOH / ZHFR sheathing for better performance under fire.

PERFORMANCE CHARACTERISTIC OF DIFFERENT TYPES OF CABLES UNDER FIRE

Sl. No.	Cable Type	Fire Characteristics	Application	Properties
01	PVC Cables/XLPE Cables	Flame Retardant (FR)	Where flame retardance is desirable, but smoke and acid gas evolution is not considered to pose a serious hazard.	IEC-60332-1, 60332-3 SS-42414 75 F3 & ASTM-D-2863 -Limiting Oxygen Index -Min. 29%. Temperature Index min. 250°C.
02	Low emission PVC Cables, XLPE Cables	Flame Retardant, Low Smoke & Reduced Halogen (FRLSH)	In situations where reduced levels of smoke and corrosive gases are needed, compared to ordinary PVC or chlorinated polymer based cables.	IEC -60332 -1, 60332 -3, SS -424 -1475 ASTM-D-2843, Smoke Density Rating: Max. 60% ASTM-D-2863, Limiting Oxgen Index : Min. 29% ASTM-D-2863, Temperature min 250°C IEC-60754-1 (Max. HCL Gas Emission): 20% by weight
03	Low Fire Hazard Low Smoke, Zero Halogen. (LSOH)	Flame Retardant Low smoke & Acid Gas Emission.	For installation in areas where smoke and acid gas evolution could pose a hazard to personnel or sensitive equipment, but where circuit integrity is not needed.	IEC-60332-1, 60332-3, SS-424-1475 ASTM-D-2843, Smoke Density Rating: Max. 20% IEC-61034, Min. Light Transmission: 80% ASTMD-2863, Limiting Oxygen Index: Min. 30% IEC-60754-2, Max. HCL :0.5% Toxicity Index: Less than 5
04	Limited Circuit Integrity reduced hazard -Halogen contents (FRLS,FS)	Fire Resistance / Fire Survival/ Flame Retardant Low Smoke (FRLS-H)& Reduced Halogen	For maintaining essential circuits such as emergency lighting and fire alarms for shorter time periods. Increased hazard from smoke and acid gas emission.	IEC-60331, 60332-1, 60332-3, SS-424 1475 ASTM-D-2843, Smoke Density Rating: 60% ASTMD-2863, Limiting Oxygen Index: Min. 29% IEC-60754-1 (Max. HCL Gas Emission): 20%
05	Limited Circuit Integrity -Low Fire & Gas Hazards. (FS Cable, (LSOH)	Fire Resistant / Fire Survival/ Flame Retardant Low Smoke & Zero Halogen.	For maintaining essential circuits such as emergency lighting and fire alarms for shorter time periods. Reduced hazard from cable combustion.	IEC-60331, 60332-1, 60332-3, SS-424 1475 ASTM-D-2843, Smoke Density Rating: Max.20% IEC-61034, Min. Light Transmission: 80% ASTMD-2863, Limiting Oxygen Index: Min. 30% IEC-60754-2, Max. HCL :0.5% Toxicity Index: Less than 5 BS-6387

PROPERTIES COVERED		TYPES					
		FR		FRLS		ZHLS	
		Flame Retardant		Flame Retardant Low Smoke		Zero Halogen Low Smoke	
PROPERTIES	REF. STANDARD	Applicable	Limit	Applicable	Limit	Applicable	Limit
Oxygen Index	ASTMD-2863	✓	29% (Min.)	✓	29% (Min.)	✓	30% (Min.)
Temperature Index	ASTMD-2863	✓	250°C (Min.)	✓	250°C (Min.)	✓	250°C (Min.)
Smoke Density Rating	ASTMD-2843 IEC: 61034			✓	60% (Max.)	✓	20% (Max.)
Halogen Acid Gas Generation	IEC: 60754-1 EN-50267-2-1			✓	20% (Max.)	✓	0.5% (Max.)
Toxicity Index	IEC: 60754-2 EN-50267-2-2					✓	0.5% (Max.)
Corrosive Gases	IEC: 60754-2 EN-50267-2-2					✓	PH≥4.3 Conductivity ≤100 us/cm
Flame Test on Single Cable	IEC: 60332-1 EN-50265-1	✓	As per Specification	✓	As per Specification	✓	As per Specification
Fire Test on Bunched Cable	IEC: 60332-3 EN-50266-2	✓	As per Specification	✓	As per Specification	✓	As per Specification
Applicable Symbols							

 FLAME RETARDANT - IEC 60332-1

 FLAME RETARDANT - IEC 60332-3

 LOW EMISSION OF DARK FUMES - ASTM D-2843

 HALOGEN FREE - IEC 60754-1

 LOW TOXICITY AND CORROSIVITY OF EMITTED GASES- IEC 60754-2

The electrical resistance of metal changes with temperature. This property is used for temperature measurements in industry. Of all usable metals platinum has found the most acceptance as:

a) It can be highly refined.

b) It resists contamination

c) It is mechanically and electrically stable over a large range of temp.

d) The relationship between temp. and resistance is quite linear.

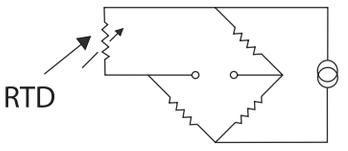
e) Drift and error with age and use are negligible

Due to its higher electrical output, Platinum Resistance Temp. Detector (RTD) furnishes an accurate input to temp. indicators, controllers, recorders, scanners, data-loggers and computers. It is used for Temp. measurement in the range –220 to 600 C. The max. temp. is determined by the type of insulation material used to enclose the platinum winding.

The most commonly used RTD is PT-100. The sensing element is made of platinum wire and its resistance is 100Ω at 0°C.

Generally the resistance of the RTD forms an arm of the bridge circuit to measure the temperature as under.

Connection Diagram for 2 wire RTD

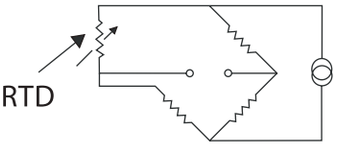


This configuration is used where the distance between the RTD and the measuring instrument is small and high accuracy is not required. Here a pair (2 core) cable is used for connection.

In a process plant there may be quite a distance between the RTD and its indicator. The resistances of lead wires and the change in them due to change in surrounding temp. may add to an error in the measurement.

To take care of lead wire resistance and the change therein due to change in ambient temperature, three wire RTD is used and the connection of the same in the bridge circuit is as under.

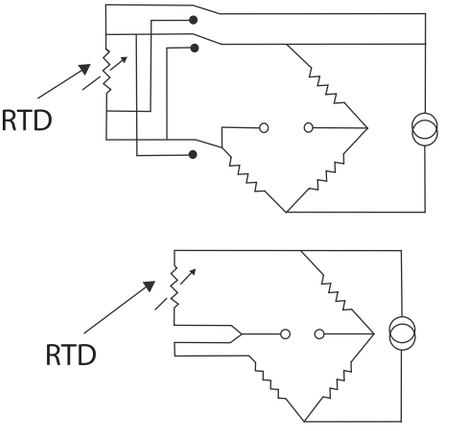
Connection Diagram for 3 wire RTD



This is the most commonly used and in this case a triad (Three Cores) cable is used for connecting RTD to the indicator/ controller/recorder.

For very accurate reading either of the following circuits are used where a quad (Four Core) cable is used connecting RTD to the measuring instrument.

Connection Diagram for 4 wire RTD



COLOUR CODE FOR INSULATION:

We provide colour code of Red, Yellow, Blue with number printing for core identification in triad cable. Some client ask for Red, Yellow, Yellow or Red, Red, Yellow for identification. B.S. specification also does not specify any colour code for triad.

Our QMS certification by BASEC covers all aspects of our operations and demonstrates our intention to take all the reasonable precautions and exercise due diligence in the continuous process monitoring of our production.

QMS certification by BASEC also enhances customers confidence that the products have been produced under an validated system which has been verified by an competent 3rd Party Agency

3rd Party Approvals

Our Cables are Type Tested and Accepted for Quality by the following 3rd Party Inspecting Agencies :

SGS · ERDA · EIL · DNV · CEI · TÜV SÜD · RITES THE INFRASTRUCTURE PEOPLE · IRCLASS Indian Register of Shipping · KEMA

SPECIAL APPLICATIONS

In Power, Marine, Oil, Gas & Petrochemical Industries a large variety of instrumentation cables are installed due to quantity of signals to be transmitted & various control systems employed in different working enviornments.

This catalog can give details of some common types of cables. We can offer to our customers a lot of solutions rather than cables restricted to few specifications.

Instrumentation cables may appear to be very similar, but with different perfomances they can make a big difference in functioning. POLYCAB is a leading manufacturer of a comprehensive range of tailor made cables and we can offer the right Instrumentation & Control cables you are looking for.

FIELDBUS/PROFIBUS CABLE

The requirement of this cables is growing at an astonishing pace and very soon POLYCAB will be in a position to offer this cables to our customers as an additional choice in our wide range of product.

CABLES FOR HARSH ENVIORNMENTAL CONDITIONS

Polycab can offer for Oil, Gas & Petrochemical industry cables with:

- Lead/Polymide sheath cables
- Resistance to heavy vibration,
- Resistance to Hydrocarbon
- Long delivery lengths to reduce number of joints
- Corrosion free screen area
- Different options for outer PE jackets (LDPE, MDPE, HDPE)
- Different options for LSF, LSOH & FRPVC, being anti-termite or UV resistant as per BS 7835 & IEC 60332 etc. and cables to other international standards to meet the very severe Oil, Water, Chemicals, Mechanical Stress in installation conditions.

Great care is taken in the manufacturing of cables to ensure quality at every stage.

- Handling is the next important factor to ensure that by poor workmanship and mishandling the quality does not deteriorate.

- Of course laying is generally carried out by unskilled or semi-skilled men, strict supervision should be maintained so that this material, which can be very easily damaged, is handled with great care.

- If great care during installation is observed in the handling of cables on site the life of the cables is extended.

A. CABLE INSPECTION

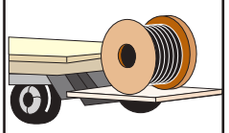
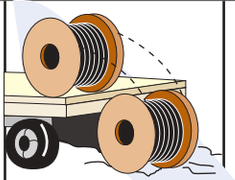
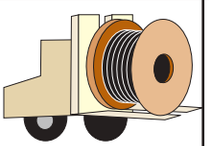
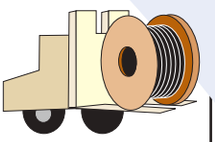
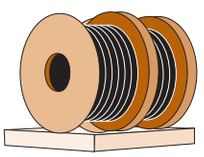
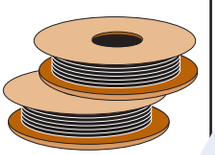
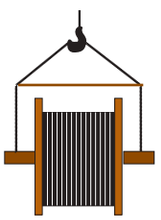
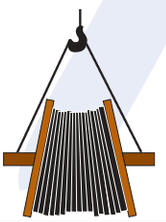
Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:

1. A reel is lying flat on its side
2. Several reels are stacked one over the other
3. Other freight is stacked on a reel
4. Cable drums are without planks or broken
5. Nails have been driven into reel flanges to secure shipping blocks
6. A reel flange is damaged
7. A cable covering is removed, stained or damaged
8. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

B. CABLE HANDLING & STORAGE

Damage to cables can occur due to the incorrect handling to which the drums and cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Do's and Don'ts that should be followed while handling and storing the cables before it is put to use.

Do's		Don'ts	
	When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or forklift truck.		Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.
	If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also Consideration should be given to, Traffic patterns during off-loading & damage during the time in storage.		Do not allow the lift forks to contact the cable. Care must be taken by the fork lift operator not to make sudden turns or stops.
	Cable reels should be stored on hard surfaces resting on the flanges edge (flanges vertical). Align reels flange to flange and, if possible, arrange so that first in is first out.		Multiple reels stacked on top of each other ("Pancake" storage) is not recommended for cable drums. The weight of the stack can total thousands of Kgs. creating an enormous load on the bottom reel. Also, damage to the reel and/or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.
	When using a hoist, install a mandrel through the reel arbor holes and attach a sling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.		This may lead to the bending of the reel flanges and mashing the cable.

C. PRE- INSTALLATION

To ensure safety during cable installation, following shall be checked prior to installation.

1. The cable selected is proper for designed application.
2. The cable has not been damaged in transit or storage.

Review all applicable state and national codes to verify that the cable chosen is appropriate for the job. Also consult your local electricity authority. Next, you must identify any existing cable damage and prevent any further damaged from occurring. This is done through proper cable inspection, handling and storage.

D. INSTALLATION & LAYING

Mechanical stresses during installation are generally more severe than those encountered while in service. Thus care should be taken as regards to the following while installation and laying of cables.

1. Polycab recommend the laying and installation of cables as per IS: 1255/84.
2. Care shall be taken during laying to avoid sharp bending, and twisting.
3. Cable shall be unwound from the drum by lifting the drum on the center.
4. Shaft supported both ends with suitable jacks / stands.
5. Under no circumstances the cable winding shall be lifted off a coil or drum lying flat at the flanges. This would cause serious twist and damages.
6. Suitable protection shall be provided to the cables against mechanical damages, it includes covers, pipes etc.

E. RECOMMENDED MINIMUM BENDING RADIUS FOR LV CABLES

Single Core : 15 x D

Multicore : 12 x D

Where D= Diameter of cable in mm

F. RECOMMENDED SAFE PULLING FORCE WITH STOCKINGS:

a) For Unarmoured Cable : $P = 5 D^2$

Where P= Pulling Force

b) For Armoured Cable : $P = 9 D^2$

Where D= Diameter of cable in mm

G. RECOMMENDED SAFE PULLING FORCE WHEN PULLED WITH PULLING EYE :

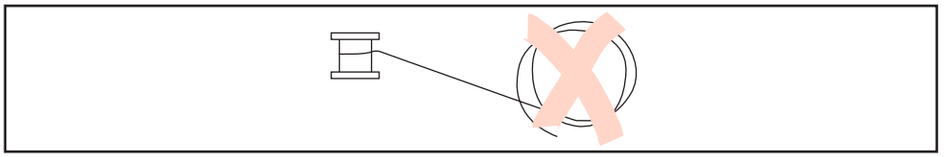
a) For Aluminum Conductors : 30 N/mm^2

b) For Copper Conductor : 50 N/mm^2

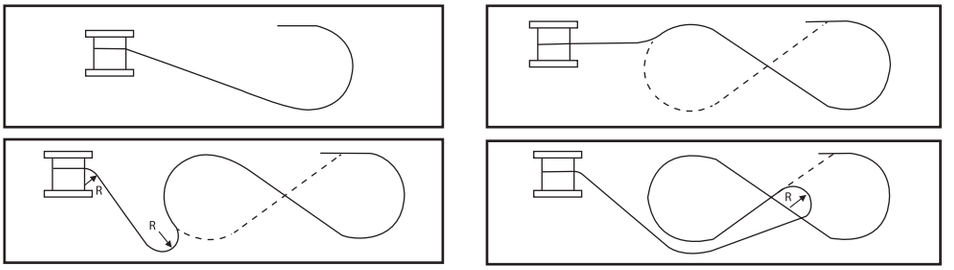
SPECIAL PRECAUTIONS FOR HANDLING / INSTALLATION OF LOW SMOKE SHEATHED CABLES

- Cables like LSF sheath needs to be handled with care during installation. While special additives are used in formulation of LSF compound to give the typical flame retardant characteristics of Zero Halogen Polymers some mechanical properties deteriorate. The following basic precautions are necessary.
- Cables should not be exposed to sunlight for considerable period before installation i.e. the temp of cables sheath should be below 45°C.
- Preferably installation is done during morning hours when the ambient temperature is low.
- Wire/ropes should not be used directly on the cable sheath for pulling.
- When pulled on cable trays/or any uneven surface, special attentions is needed to welding or unusually rough terrains.
- Rollers and bends should not have any sharpness which may damage sheath.

DO NOT ATTEMPT "COILING" OF CABLE ON THE GROUND



ON THE GROUND CABLE CAN BE FLAKED IN A FIGURE OF EIGHT FORMATION



Note: R Minimum Permissible bending radius of cable.

SERVICE VOLTAGE UØ /U

☐ 300/300 V ☐ 300/500 V ☐ 600/1000 V ☐ Other_____V

MUTUAL CAPACITANCE

☐ max _____ nf/km at 1 kHz

CONDUCTOR

☐ 0.5 ☐ 0.75 ☐ 1 ☐ 1.5 ☐ 2.5 ☐ Other___mm²

☐ Solid CL 1 ☐ Stranded CL 2 ☐ Flexible CL 5 ☐ Other

☐ Tinned Copper ☐ Bare Copper ☐ IS 8130 ☐ IEC 60228 ☐ Other

INSULATION MATERIAL

☐ PVC 'A' Y ☐ PVC 'C' Y ☐ PE 2Y ☐ XLPE 2X ☐ FR XLPE 2X ☐ O. HAL H ☐ CROSSL.O.HAL HX ☐ EPR R ☐ SILICON 2G(Bi)

STRANDING ELEMENTS

☐ Cores ☐ Pairs ☐ Triples ☐ Quads

INDIVIDUAL SCREENING

☐ Aluminium Mylar ☐ Copper Mylar ☐ Copper Tape ☐ Tinned Cu Braiding ☐ Bare Cu Braiding ☐ Gi Wire Braiding ☐ Other ☐ Not Required

DRAIN WIRE

☐ 0.5 ☐ 0.75 ☐ 1 ☐ 1.5 ☐ 2.5 ☐ Other___mm²

☐ Solid CL 1 ☐ Stranded CL 2 ☐ Flexible CL 5 ☐ Other

☐ Tinned ☐ Bare ☐ IS 8130 ☐ IEC 60228 ☐ Other

OVERALL SCREENING

☐ Aluminium Mylar ☐ Copper Mylar ☐ Copper Tape ☐ Tinned Cu Braiding ☐ Bare Cu Braiding ☐ Gi Wire Braiding ☐ Other ☐ Not Required

METALLIC SHEATH

☐ Alu-Laminated Sheath (L) ☐ Lead Alloy "E" Sheath K

ARMOURING

☐ Galv. Double Steel Tapes B ☐ Galv. Round Steel Wires R ☐ Galv. Flat Steel Wires FG ☐ Galv. Steel Wire Braid Q

OTHER SHEATH

☐ PE 2Y ☐ HDPE 2Y ☐ PVC Y ☐ PVC FR Y (FR) ☐ PVC FRLS Y (FRLS) ☐ O. HAL H ☐ CSP CSM ☐ Other

OUTER SHEATH COLOUR

☐ Black ☐ Red ☐ Blue ☐ Orange ☐ Grey ☐ Other_____

TELEPHONE (COMMUNICATION) PAIR

☐ Required ☐ Not Required

BEHAVIOUR WHEN AFFECTED BY FIRE

☐ Fire Resistant IEC 331 ☐ Fire Retardant IEC 332-3 Cat_____ ☐ Flame Retardant IEC 332-1

In case of thermo couple extension cable and compensating cable please specify type of thermo couple and conductor size required.
In case of type k thermo couple please inform Conductor Material - Chromel / Alumel or Copper / Constantan etc.
Specifiy the standard drum lengths.

Notes

Let's go **green**

www.polycab.com

Corporate Office:
POLYCAB INDIA LIMITED **(formerly known as 'Polycab Wires Limited.')**
Polycab House, 771, Mogul Lane, Mahim (W), Mumbai - 400 016, Maharashtra (India)
Ph.: +91-22-2432 7070/4, 6735 1400, Email: enquiry@polycab.com, Toll Free No.: 1800 267 0008, www.polycab.com

Instrumentation Cable / Jan / 2020

ISO 9001:2008

ISO 14001:2004

OHSAS 18001:2007

IS:7098 (Part I)

POLYCAB

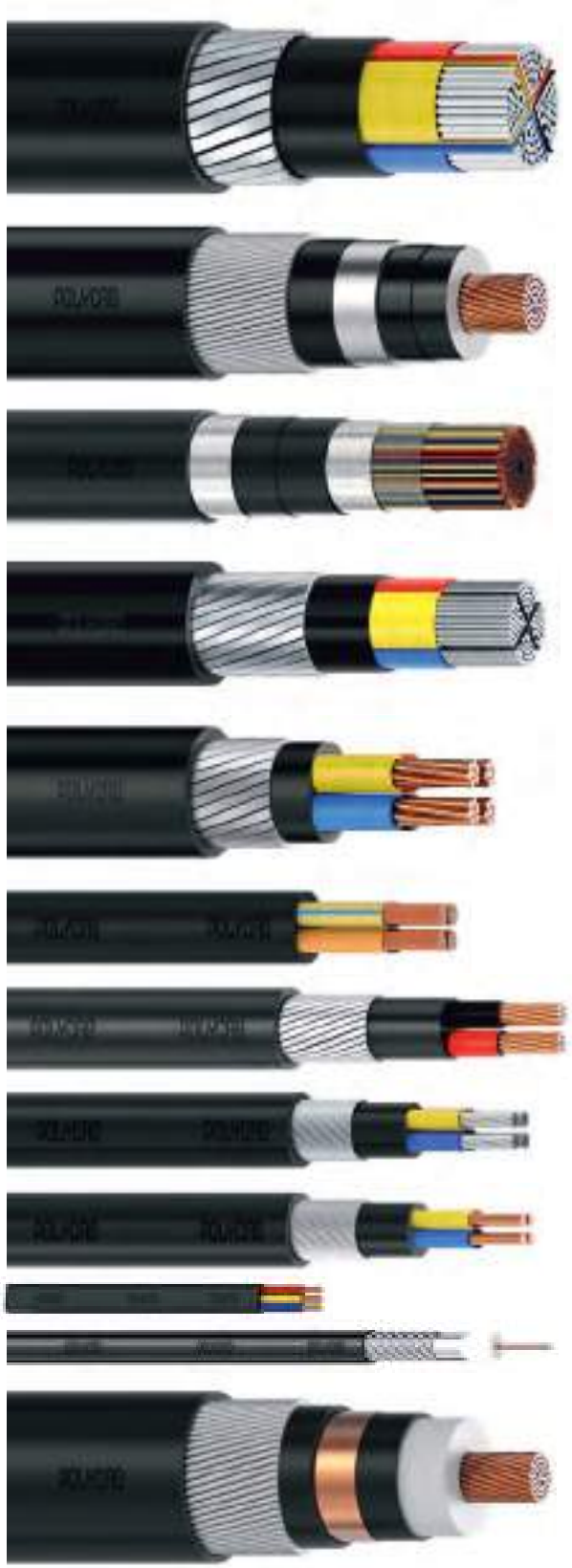
Connection Zindagi Ka

DETAILS MAKE THE DIFFERENCE

XLPE INSULATED HEAVY DUTY CABLES 650 / 1100V.

POLYCAB
Connection Zindagi Ka

Product Range



- L.V. PVC & XLPE POWER CABLES WITH COPPER AND ALUMINIUM CONDUCTOR
- L.V. PCV & XLPE CONTROL CABLES WITH COPPER CONDUCTOR
- M.V. POWER CABLES UPTO 33 kV
- EHV CABLES FROM 66kV TO 220kV
- ZERO HALOGEN CABLES
- FIRE SURVIVAL CABLES (FS)
- INSTRUMENTATION CABLES SCREENED / UNSCREENED
- INDUSTRIAL BRAIDED CABLES
- THERMO COUPLE / COMPENSATING CABLES
- LEAD SHEATHED CABLES
- RUBBER CABLES
- RAILWAY SIGNALLING CABLES
- TELEPHONE CABLES DRY & JELLY FILLED
- BUILDING WIRES FR / FRLS / FRZH / FRLF / FRFS
- SINGLE CORE INDUSTRIAL FLEXIBLES PVC / FR / FRLS / FRZH / HRFR / HR / HR-FRLS / FRLF / FRFS
- MULTI CORE INDUSTRIAL FLEXIBLE CABLES
- SUBMERSIBLE FLAT AND ROUND CABLES
- COAXIAL CABLES
- LAN CAT-5E / CAT 6 CABLES
- WELDING CABLES
- SOLAR AC / DC CABLES
- STEEL BRAIDED CABLES
- SPECIALITY CABLES SUITED FOR MARINE / OIL & GAS / EXTREME FIRE CONDITIONS / HIGHLY CORROSIVE ENVIRONMENT / TRAFFIC / AIRCRAFT / SPACE STATION / AUTOMOBILES
- OPTIC FIBRE CABLES

Contents

COMPANY PROFILE

POLYCAB AN ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 COMPANY IS INDIA'S NO.1 CABLES & WIRES COMPANY WITH A GLORIOUS TRACK RECORD OF OVER 4 DECADES. OUR MANUFACTURING FACILITIES AT HALOL (VADODARA), DAMAN, NASHIK AND ROORKEE IN INDIA, ADDRESSES TO THE SPECIFIC NEEDS WITH STATE-OF-THE-ART MACHINERY AND TECHNOLOGY.

POLYCAB'S TURNOVER HAS CROSSED INR 6000 CRORE'S IN THE FISCAL YEAR 2016-17. POLYCAB DERIVES ITS STRENGTH FROM ITS CUSTMERS AND THOSE BEING IN SECTORS LIKE UTILITIES, POWER GENERATION, TRANSMISSION & DISTRIBUTION, PETROLEUM & OIL REFINERIES, OEMs, EPC CONTRACTORS, STEEL & METAL, CEMENT, CHEMICAL, ATOMIC ENERGY, NUCLEAR PLANTS, AS WELL AS GOVERMMENT PARTNERS LIKE BSNL, RAILWAYS AND PRIVATE TELECOM OPERATORS LIKE RELIANCE, VODAFONE, AIRTEL, AIRCEL, TATA, IDEA AND MANY MORE.

THINGS YOU DIDN'T KNOW ABOUT POLYCAB

BETWEEN ITS FACILITIES IN DAMAN, HALOL (VADODARA), NASHIK AND ROORKEE THE COMPANY HAS 3.5 MILLION SQUARE FEET OF MANUFACTURING SPACE.

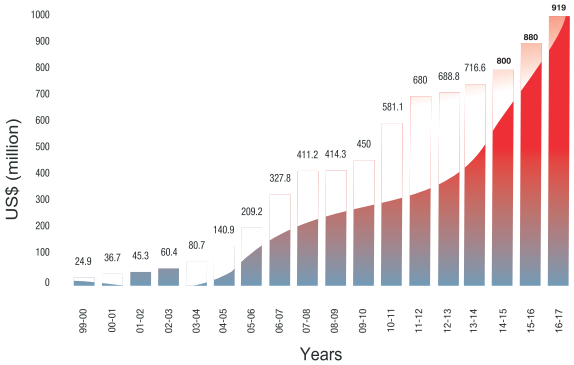
POLYCAB MANUFACTURES ENOUGH CABLE EACH YEAR TO CIRCUMNAVIGATE THE EARTH THREE AND A HALF TIMES AND ENOUGH WIRE TO GO TO THE MOON AND COME BACK - FOUR TIMES.

POLYCAB HAS INCREASED ITS TURNOVER 100 TIMES IN SIXTEEN YEARS.

OVER 300 AUTHORISED DISTRIBUTORS SERVICE ITS INDIA NEEDS AND ITS OVERSEAS INTERESTS.

POLYCAB OFFERS A VARIETY OF SERVICES:

- COMMERCIALLY REASONABLE PRICES
- RELIABLE & CONSISTENT QUALITY
- PRODUCT DEVELOPMENT AS PER MARKET
- A TARGET STOCKING POLICY
- TECHNICAL SUPPORT FOR APPLICATION



Basec PCR Quality Certifications

CERTIFICATE

Polycab India Limited

ISO 45001 : 2018

CERTIFICATE

Polycab India Limited

ISO 14001 : 2015

CERTIFICATE

Polycab India Limited

ISO 9001 : 2015

Basec PCR Quality Certifications

Basec PCR Quality Certifications


BASEC

Product Certification Schedule

PERMISSIBLE MARKS

BASEC

YELLOW ACETATE THREAD


BASEC

Product Certification Schedule

PERMISSIBLE MARKS

BASEC

YELLOW ACETATE THREAD


BASEC

Product Certification Licence

Polycab India Limited
74/6-11 Daman Industrial Estate
Village Kadaiya
Daman-396210
UT
India


BASEC

Table of Product Certificate Schedules

Polycab India Limited
74/6-11 Daman Industrial Estate
Village Kadaiya
Daman-396210
UT
India

Table of Product Certification Schedules: 176001T


BASEC

CERTIFICATION SCHEDULE


BASEC

CERTIFICATE OF CONFORMITY

Polycab India Limited

Has implemented and maintains a
Product Management System
that fulfils the requirements of the following

BASEC Product Certification Requirements


BASEC

CERTIFICATION SCHEDULE


BASEC

PCR:216001

Certificate of Conformity

Polycab India Limited

BASEC PCR Issue 10 2019


BASEC

PCR:216002

Certificate of Conformity

Polycab India Limited

BASEC PCR Issue 10 2019

XLPE Cables

XLPE insulated heavy duty cables were introduced worldwide in mid sixties. These cables have overcome the limitations of PVC Insulated Cables such as thermal degradation, poor moisture resistance and thermoplastic nature.

The advantages of XLPE Insulated cables in comparison to PVC insulated cables are as under:

APPLICATION :

The Cables are suitable for use on AC single phase or three phase (earthed or unearthed) systems for rated Voltage up to and including 1100 Volts. These Cables can be used on DC Systems for rated Voltage up to and including 1500 Volts to earth.

A. Technical Advantages:

1. Higher current rating, higher short circuit rating approx. 1.2 times that of PVC.
2. Thermosetting in nature.
3. Higher insulation resistance 1000 times more than PVC cables.
4. Higher resistance to moisture.
5. Better resistance to surge currents.
6. Low dielectric losses.
7. Better resistance to chemicals.
8. Longer service life.
9. Comparatively higher cable operation temperature 90ºC and short circuit temperature 250ºC

B. Commercial Advantages:

1. Lower laying cost because of comparatively smaller diameter of cable and higher weight*.
2. Lower installation charges as the diameter of cable is comparatively lesser with smaller bending radius, requiring less space requirement for laying cables.
3. **One size lower cable can be used as compared to PVC insulated cable.

*Density of XLPE is lower than PVC

** For longer cable length voltage drop shall be considered

Polycab Cables of 0.6 / 1 (1.2) KV 4C X 300 Sq. mm, 1C X 800 Sq. mm has been successfully type tested at DEKRA - Netherland

HIGHER ELECTRICAL STRENGTH RETENTION

HIGHER SHORT CIRCUIT RATING

BETTER ELECTRICAL, MECHANICAL & THERMAL PROPERTIES

EASY JOINTING & TERMINATION

Selection of Cables

Power Cables are generally selected considering the application. However following factors are important for selection of suitable cable construction required to transport electrical energy form one end to the other.

1) Maximum operating voltage.
2) Fault level.
3) Load to be carried.
4) Possible overloading duration & magnitude.
5) Route length and voltage drop.
6) Mode of installation considering installation environment such as ambient & ground temperature as well as chemical & physical properties of soil, Grouping factors, arrangement of Cables during installation
7) Flame retardant properties.

All sizes of POLYCAB XLPE cables are designed for standard operating conditions in India and abroad. The standards adopted are after duly considering the geographical / climactical conditions and general applications of power for utilities, distribution and generation purposes.

The cables are manufactured conforming to Indian & International cables specification for XLPE Insulated cables. Customer specific requirements can also be met.

Basic assumptions

The current rating given as per before mentioned following assumptions

a) Maximum Conductor temperature : 90˚C
b) Thermal resistivity of soil : 1.5k. m/w
c) Ground temperature : 30˚C
d) Ambient air temperature : 40˚C
e) Depth of laying (measured to : 750 mm

Comparative Current Rating and short Circuits Rating for XLPE Cable Vis-a-Vis PVC Cables

COMPARATIVE CURRENT RATINGS OF 650/1100 VOLTS MULTICORE HEAVY DUTY PVC INSULATED CABLES & XLPE INSULATED CABLES.

(3. 3.5 & 4 Core Unarmoured / Armoured PVC Sheathed Cables with Aluminium Conductor.)

Nominal Size of Cable	3, 3.5 & 4 Core PVC Insulated & Sheathed Cables as per IS - 1554 (Part-1)			3, 3.5 & 4 Core XLPE Insulated & Sheathed Cables as per IS - 7098 (Part-1)		
	In Ground	In Air	Approx Voltage Drop	In Ground	In Air	Approx Voltage Drop
Sq. mm	Amp	Amp	mv / anp / mtr	Amp	Amp	Mv / amp / mtr
16	61	52	3.96	74	69	4.24
25	78	70	2.49	95	93	2.67
35	94	85	1.80	114	114	1.94
50	111	104	1.34	134	138	1.43
70	136	131	0.93	164	175	0.99
95	163	162	0.68	197	216	0.72
120	185	186	0.54	223	249	0.58
150	206	212	0.45	249	284	0.48
185	234	245	0.36	282	329	0.39
240	271	291	0.29	327	392	0.31
300	305	335	0.25	369	452	0.26
400	348	390	0.21	420	526	0.21

COMPARISON OF SHORT CIRCUIT RATING FOR 1 SECOND DURATION FOR

* PVC & XLPE Insulated Cables ** with Copper and Aluminium Conductors. (Current in kAmps)

Nominal Size	PVC Insulated		XLPE Insulated	
Sq. mm	Copper	Aluminium	Copper	Aluminium
1.5	0.173	-	0.21	-
2.5	0.29	-	0.36	-
4	0.46	0.30	0.57	0.38
6	0.69	0.46	0.86	0.57
10	1.15	0.76	1.43	0.95
16	1.84	1.22	2.29	1.51
25	2.88	1.90	3.58	2.36
35	4.03	2.66	5.01	3.31
50	5.75	3.80	7.16	4.73
70	8.05	5.32	10.02	6.62
95	10.93	7.22	13.59	8.98
120	13.80	9.12	17.17	11.34
150	17.25	11.40	21.47	14.18
185	21.27	14.06	26.47	17.48
240	27.60	18.24	34.34	22.68
300	34.50	22.80	42.93	28.35
400	46	30.40	57.24	37.80
500	57.50	38	71.55	47.25
630	72.45	47.88	90.15	59.54
800	92	60.80	114.48	75.60
1000	115	76	143.10	94.50

* PVC Type A Insulation as per IS-5831 84.
** PVC Cables as per IS-1554 (Part-1)
** XLPE Cables as per IS-7098 (Part-1)

1) Max. Conductor Temperature during Operation — PVC 70°C — XLPE 90°C

2) Max. Conductor Temperature During Short circuit. — 160° C — 250°C

Formula relating Short Circuit Rating with duration

$$Ish = \frac{K * A}{\sqrt{t}}$$

A = Gross section area in Sq. mm
T = Duration in seconds
K = Constant
Ish = Short circuit current, KA

APPROXIMATE CAPACITANCE (Microfarads / Km) 1.1 KV XLPE CABLES.

Nominal Area of Conductor	Single Core	Two Core	Three, Three & Half and Four Core
	Armoured	Armoured	Armoured
1.5	-	0.18	0.18
2.5	-	0.21	0.21
4	-	0.25	0.25
6	-	0.29	0.29
10	0.34	0.36	0.36
16	0.40	0.43	0.43
25	0.42	0.43	0.43
35	0.47	0.50	0.50
50	0.50	0.53	0.53
70	0.55	0.57	0.56
95	0.62	0.65	0.65
120	0.66	0.67	0.67
150	0.64	0.65	0.64
185	0.66	0.63	0.63
240	0.70	0.68	0.67
300	0.74	0.71	0.71
400	0.75	0.73	0.72
500	0.78	0.74	0.74
630	0.82	0.77	0.77
800	0.83	-	-
1000	0.87	-	-

APPROXIMATE REACTANCE AT 50 HZ (0hn/Km) 1.1 KV XLPE CABLES.

Nominal Area of Conductor	Single Core		Multi Core
	Unarmoured	Armoured	
1.5	0.154	-	0.105
2.5	0.143	-	0.0990
4	0.134	-	0.0933
6	0.125	-	0.0888
10	0.116	0.131	0.0842
16	0.110	0.124	0.0805
25	0.105	0.117	0.0808
35	0.101	0.112	0.0787
50	0.0937	0.108	0.0780
70	0.0910	0.100	0.0742
95	0.0879	0.099	0.0725
120	0.0850	0.0951	0.0713
150	0.0855	0.0936	0.0718
185	0.0839	0.0913	0.0720
240	0.0820	0.0887	0.0713
300	0.0801	0.0868	0.0703
400	0.0792	0.0861	0.0702
500	0.0780	0.0843	0.0700
630	0.0767	0.0829	0.0697
800	0.0762	0.0819	-
1000	0.0757	0.0820	-

CONDUCTOR TECHNICAL INFORMATION FOR SINGLE CORE AND MULTICORE CABLES CONFORMING TO IS-8130/1984 (STRANDED-CLASS-2) COPPER & ALUMINIUM CONDUCTORS.

Nominal Size of Conductor	Minimum no. of wires				Max D.C. Resistance at 20°C		A. C. Resistance at 90°C	
	Non Compacted		Compacted Round / Shaped		Plain Copper	Aluminium	Plain Copper	Aluminium
Sq.mm	CU.	ALU.	CU.	ALU.	Ohm/Km	Ohm/Km	Ohm/Km	Ohm/Km
1.5*	3	3	-	-	12.10	18.1	15.40	23.2
2.5*	3	3	-	-	7.41	12.1	9.45	15.50
4*	7	3	-	-	4.61	7.41	5.88	9.50
6*	7	3	-	-	3.08	4.61	3.93	5.91
10*	7	7	6	-	1.83	3.08	2.33	3.95
16	7	7	6	6	1.15	1.91	1.47	2.44
25	7	7	6	6	0.727	1.20	0.93	1.54
35	7	7	6	6	0.524	0.868	0.668	1.11
50	19	19	6	6	0.387	0.641	0.494	0.82
70	19	19	12	12	0.268	0.443	0.342	0.568
95	19	19	15	15	0.193	0.32	0.247	0.410
120	37	37	18	15	0.153	0.253	0.196	0.325
150	37	37	18	15	0.124	0.206	0.159	0.264
185	37	37	30	30	0.0991	0.164	0.128	0.211
240	61	37	34	30	0.0754	0.125	0.0985	0.161
300	61	61	34	30	0.0601	0.100	0.0796	0.129
400	61	61	53	53	0.047	0.0778	0.0637	0.101
500	61	61	53	53	0.0366	0.0605	0.0515	0.0786
630	91	91	53	53	0.0283	0.0469	0.0421	0.0615
800	91	91	53	53	0.0221	0.0367	0.0354	0.0488
1000	91	91	53	53	0.0176	0.0291	0.0225	0.0372

* These sizes can be manufactured with solid conductor having single strand

POLYCAB PRECONDITIONS FOR CURRENT RATING

1. The values given in the table are valid for on circuit in a three phase system under conditions specified. For grouping cables rating factor must be used.
2. The current carrying capacities mentioned in POLYCAB technical data are intended as a guide, to assist operating engineers in selecting cables for safety and reliability.

3. Basic assumption and condition of installation:
   * Ambient ground Temperature: 30˚C
   * Ambient air Temperature: 40˚C
   * Depth of Cable Burial: 750 mm
   * Thermal Resistivity of soil: 1.5 k.m/w

4. Single Core Cables are installed as indicated in the table; spacing between cables in flat formation is as indicated.

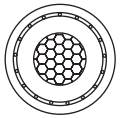
5. For 3 and 4 core cables, it is usual to assume the same current carrying capacity for 4 core cable as for 3 core cables. Our calculated values are based actually on 3 core cables. These values are suitable with enough accuracy also for 4 cables in most cases. Only for large 4 core cables in air the values are too conservative, due to the large cable surface and consequent high heat dissipation factor.

6. To obtain the maximum current carrying capacity of a cable operating at different conditions from the standard, various rating factors are to be multiplied as follows:

Ia = K Is (in Amperes)

Where
Ia = Current Rating at actual Operating Conditions (amperes)
Is = Current Rating at Standard Operating Conditions (amperes)
K = Rating factor as applicable

TABLE-1 "POLYCAB" SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED,
UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1



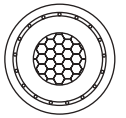
650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular	Nominal Thickness of XLPE Insulation For U/A	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Nominal Thickness of XLPE Insulation for Armoured Cable	Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable		Nominal Dimension of Aluminium Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable.	Approx. Weight of Cable	Nominal Dimension of Aluminium Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	-NA-	1.80	7.50	60	-	-	-	-	-	-	-	-	-	43	38	1000
4	Stranded	0.70	-NA-	1.80	8	65	-	-	-	-	-	-	-	-	-	43	38	1000
6	Solid	0.70	-NA-	1.80	8	70	-	-	-	-	-	-	-	-	-	55	50	1000
6	Stranded	0.70	-NA-	1.80	8.50	75	-	-	-	-	-	-	-	-	-	55	50	1000
10	Solid	0.70	-NA-	1.80	9	80	1	-	-	-	-	-	-	-	-	69	64	1000
10	Stranded	0.70	-NA-	1.80	9.50	90	1	-	-	-	-	-	-	-	-	69	64	1000
16	Stranded	0.70	-NA-	1.80	10	115	1	-	-	-	-	1.40	1.24	12.5	190	89	84	1000
25	Stranded	0.90	-NA-	1.80	12	155	1.20	-	-	-	-	1.40	1.24	14	247	115	112	1000
35	Stranded	0.90	-NA-	1.80	13	180	1.20	-	-	-	-	1.40	1.24	15	290	137	137	1000
50	Stranded	1	-NA-	1.80	14	240	1.30	-	-	-	-	1.40	1.24	16.5	342	161	165	1000
70	Stranded	1.10	-NA-	1.80	15.5	310	1.40	-	-	-	-	1.40	1.24	18.5	428	198	209	1000
95	Stranded	1.10	-NA-	1.80	17.50	385	1.40	4 x 0.80	1.40	18.60	494.00	1.60	1.40	20.20	560	243	264	1000
120	Stranded	1.20	-NA-	1.80	19.5	470	1.50	4 x 0.80	1.40	20.40	589.00	1.60	1.40	22.50	665	276	308	1000
150	Stranded	1.40	-NA-	2	21.50	600	1.70	4 x 0.80	1.40	22.5	694.00	1.60	1.40	24.0	779	308	350	1000
185	Stranded	1.60	-NA-	2	23.50	710	1.90	4 x 0.80	1.40	24.5	827.00	1.60	1.40	26.50	921	349	406	1000
240	Stranded	1.70	-NA-	2	26	900	2	4 x 0.80	1.40	26.60	1026	1.60	1.40	29	1121	404	480	1000
300	Stranded	1.80	-NA-	2	28.50	1158	2.10	4 x 0.80	1.56	29.60	1235	1.60	1.56	31.50	1349	454	551	1000
400	Stranded	2	-NA-	2.20	31.5	1385	2.40	4 x 0.80	1.56	33.00	1548.5	2	1.56	35.50	1739	518	647	500
500	Stranded	2.20	-NA-	2.20	35.5	1650	2.60	4 x 0.80	1.56	36.70	1909.5	2	1.56	39.50	2128	588	751	500
630	Stranded	2.40	-NA-	2.20	39.5	2100	2.80	4 x 0.80	1.72	40.50	2413	2	1.72	43	2660	663	868	500
800	Stranded	2.60	-NA-	2.40	44.50	2730	3.10	4 x 0.80	1.72	46.00	2992.5	2	1.88	47.90	3296.5	740	992	500
1000	Stranded	2.80	-NA-	2.60	48.50	3350	3.30	4 x 0.80	1.88	50.00	3667	2.50	2.04	54.37	4142	812	1117	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-2 "POLYCAB" SINGLE CORE COPPER CONDUCTOR, XLPE INSULATED,
UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1



650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular	Nominal Thickness of XLPE Insulation For U/A	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Nominal Thickness of XLPE Insulation for Armoured Cable	Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable		Nominal Dimension of Aluminium Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of Aluminium Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	-NA-	1.80	7.50	85.5	-	-	-	-	-	-	-	-	-	54	48	1000
4	Stranded	0.70	-NA-	1.80	8	88	-	-	-	-	-	-	-	-	-	54	48	1000
6	Solid	0.70	-NA-	1.80	8	109	-	-	-	-	-	-	-	-	-	67	61	1000
6	Stranded	0.70	-NA-	1.80	8.50	114	-	-	-	-	-	-	-	-	-	67	61	1000
10	Stranded	0.70	-NA-	1.80	9.50	152	1	-	-	-	-	1.40	1.24	12	219	90	83	1000
16	Stranded	0.70	-NA-	1.80	10	209	1	-	-	-	-	1.40	1.24	13	281	115	108	1000
25	Stranded	0.90	-NA-	1.80	12	309	1.20	-	-	-	-	1.40	1.24	14	390	148	144	1000
35	Stranded	0.90	-NA-	1.80	13	399	1.20	-	-	-	-	1.40	1.24	16	485	177	176	1000
50	Stranded	1	-NA-	1.80	14	513	1.30	-	-	-	-	1.40	1.24	17	608	208	212	1000
70	Stranded	1.10	-NA-	1.80	16	712	1.40	-	-	-	-	1.40	1.24	19	817	255	269	1000
95	Stranded	1.10	-NA-	1.80	17.50	940	1.40	4 x 0.80	1.40	18.60	1036	1.60	1.40	22	1102	312	340	1000
120	Stranded	1.20	-NA-	1.80	19	1168	1.50	4 x 0.80	1.40	20.40	1264	1.60	1.40	23.50	1339	355	396	1000
150	Stranded	1.40	-NA-	2	21.50	1444	1.70	4 x 0.80	1.40	22.20	1530	1.60	1.40	24.50	1615	396	450	1000
185	Stranded	1.60	-NA-	2	23.50	1786	1.90	4 x 0.80	1.40	24.40	1890	1.60	1.40	26.50	1976	447	519	1000
240	Stranded	1.70	-NA-	2	26	2299	2	4 x 0.80	1.40	26.60	2404	1.60	1.40	29	2508	515	613	1000
300	Stranded	1.80	-NA-	2	28.50	2840.5	2.10	4 x 0.80	1.56	29.60	2974	1.60	1.56	31.50	3078	576	700	500
400	Stranded	2	-NA-	2.20	33	3629	2.40	4 x 0.80	1.56	33.20	3762	2	1.56	36.00	3962	651	813	500
500	Stranded	2.20	-NA-	2.20	36	4598	2.60	4 x 0.80	1.56	36.70	4770	2	1.56	39.50	4969	727	930	500
630	Stranded	2.40	-NA-	2.20	40	5880	2.80	4 x 0.80	1.72	41.20	6070	2	1.72	43	6318	806	1056	500
800	Stranded	2.60	-NA-	2.40	43.70	7486	3.10	4 x 0.80	1.72	45.10	7676	2	1.88	48.5	7990	877	1179	500
1000	Stranded	2.80	-NA-	2.60	49.20	9358	3.30	4 x 0.80	1.88	50.60	9567	2.50	2.04	54	10051	935	1288	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-3 "POLYCAB" TWO CORE ALUMINIUM CONDUCTOR, XLPE INSULATED,

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation For U/A	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of Aluminium Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of Aluminium Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	12.50	140	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.50	375	42	38	1000
4	Stranded	0.70	0.30	1.80	13	150	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.00	403	42	38	1000
6	Solid	0.70	0.30	1.80	13.50	170	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.50	437	55	50	1000
6	Stranded	0.70	0.30	1.80	14	180	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.50	465	55	50	1000
10	Solid	0.70	0.30	1.80	15	205	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	503	68	64	1000
10	Stranded	0.70	0.30	1.80	16	225	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18	551	68	64	1000
16	Stranded	0.70	0.30	1.80	14	225	-NA-	-NA-	-NA-	-NA-	1.40	1.40	17	480.16	89	83	1000
25	Stranded	0.90	0.30	2	17	330	4 x 0.80	1.40	18.50	509.13	1.60	1.40	20	671.84	114	109	1000
35	Stranded	0.90	0.30	2	19	410	4 x 0.80	1.40	20	605.51	1.60	1.40	22	775.55	136	133	1000
50	Stranded	1	0.30	2	21	510	4 x 0.80	1.40	22.50	753.28	1.60	1.40	24	937.97	161	162	1000
70	Stranded	1.10	0.30	2	23	675	4 x 0.80	1.56	22.50	989	1.60	1.56	27	1186.85	197	204	1000
95	Stranded	1.10	0.40	2.20	26.50	893	4 x 0.80	1.56	28	1204.30	2	1.56	28.68	1572.78	235	251	1000
120	Stranded	1.20	0.40	2.20	28.50	1050	4 x 0.80	1.56	30.50	1408.20	2	1.56	33	1849.49	266	287	500
150	Stranded	1.40	0.40	2.20	32	1215	4 x 0.80	1.72	31.79	1690.20	2	1.72	36	2182.96	296	328	500
185	Stranded	1.60	0.50	2.40	35.50	1510	4 x 0.80	1.72	34.95	2004.00	2	1.88	37.70	2597.60	335	379	500
240	Stranded	1.70	0.50	2.60	39.50	1900	4 x 0.80	1.88	38.69	2480.00	2.50	2.04	45	3418.52	385	448	500
300	Stranded	1.80	0.60	2.80	43.50	2360	4 x 0.80	2.04	42.53	2964.00	2.50	2.20	46.22	4019.07	432	513	500
400	Stranded	2	0.60	3	49	3100	4 x 0.80	2.36	48.24	3676.00	2.50	2.36	51.61	4854.00	487	593	500
500	Stranded	2.20	0.70	3.40	55.50	4000	4 x 0.80	2.52	56.50	4599.00	3.15	2.68	61.50	6517.00	548	683	500
630	Stranded	2.40	0.70	3.60	61.50	4997	4 x 0.80	2.68	62.50	5662.00	3.15	2.84	67.50	7790.00	612	784	500

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-4 "POLYCAB" TWO CORE COPPER CONDUCTOR, XLPE INSULATED,

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	12.50	165	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.00	408	54	48	1000
4	Stranded	0.70	0.30	1.80	13	175	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.50	427	54	48	1000
6	Solid	0.70	0.30	1.80	13.50	210	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.00	484	67	61	1000
6	Stranded	0.70	0.30	1.80	14	225	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.00	522	67	61	1000
10	Stranded	0.70	0.30	1.80	16	300	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.50	665	89	83	1000
16	Stranded	0.70	0.30	1.80	14	422	-NA-	-NA-	-NA-	-NA-	1.40	1.40	17	696.50	115	108	1000
25	Stranded	0.90	0.30	2	17	636	4 x 0.80	1.40	18.50	804.40	1.60	1.40	20	1001.70	147	140	1000
35	Stranded	0.90	0.30	2	19	817	4 x 0.80	1.40	20	1019.70	1.60	1.40	22	1224.20	176	172	1000
50	Stranded	1	0.30	2	21	1054	4 x 0.80	1.40	22.50	1311.00	1.60	1.40	24	1520.00	208	208	1000
70	Stranded	1.10	0.30	2	23	1453	4 x 0.80	1.56	25.50	1757.00	1.60	1.56	27	2004.00	253	262	1000
95	Stranded	1.10	0.40	2.20	26.50	1966	4 x 0.80	1.56	28	2289.00	2	1.56	30.50	2736.00	302	322	500
120	Stranded	1.20	0.40	2.20	28.50	2413	4 x 0.80	1.56	30.50	2755.00	2	1.56	33	3230.00	340	368	500
150	Stranded	1.40	0.40	2.20	32	2935	4 x 0.80	1.72	31.80	3353.00	2	1.72	36	3876.00	379	419	500
185	Stranded	1.60	0.50	2.40	35.50	3676	4 x 0.80	1.72	37	4094.00	2	1.88	40	4731.00	425	482	500
240	Stranded	1.70	0.50	2.60	39.50	4750	4 x 0.80	1.88	38.70	5225.00	2.50	2.04	42.40	6203.00	486	566	500
300	Stranded	1.80	0.60	2.80	43.50	5918	4 x 0.80	2.04	42.50	6412.00	2.50	2.20	46.20	7514.00	541	644	500
400	Stranded	2	0.60	3	49	7495	4 x 0.80	2.36	48.20	8075.00	2.50	2.36	51.60	9262.00	602	734	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-5 "POLYCAB" THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED,
UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	13	140	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15	460	35	32	1000
4	Stranded	0.70	0.30	1.80	13.50	160	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	399	35	32	1000
6	Solid	0.70	0.30	1.80	14.50	170	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	530	46	42	1000
6	Stranded	0.70	0.30	1.80	15	190	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17	470	46	42	1000
10	Solid	0.70	0.30	1.80	15.50	220	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18	640	57	54	1000
10	Stranded	0.70	0.30	1.80	17	230	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18.50	551	57	54	1000
16	Stranded	0.70	0.30	1.80	16.20	304	4 x 0.80	1.24	16.80	487.60	1.60	1.40	19	648.40	74	69	1000
25	Stranded	0.90	0.30	2	19.50	446	4 x 0.80	1.40	20.10	670.70	1.60	1.40	21.70	855.00	95	93	1000
35	Stranded	0.90	0.30	2	21.50	551	4 x 0.80	1.40	22	798.00	1.60	1.40	23.60	997.00	114	114	1000
50	Stranded	1	0.30	2	24.50	693	4 x 0.80	1.40	24.80	960.00	1.60	1.56	26.80	1235.00	134	138	1000
70	Stranded	1.10	0.40	2.20	28	950	4 x 0.80	1.56	28.50	1282	2	1.56	30.90	1729.00	164	175	500
95	Stranded	1.10	0.40	2.20	30.80	1206	4 x 0.80	1.56	31.30	1577	2	1.56	33.70	2077.00	197	216	500
120	Stranded	1.20	0.40	2.20	33.80	1463	4 x 0.80	1.56	34.30	1871	2	1.72	37	2422.00	223	249	500
150	Stranded	1.40	0.50	2.40	37.90	1814	4 x 0.80	1.72	38.30	2100	2	1.88	41.10	2888.00	249	284	500
185	Stranded	1.60	0.50	2.60	42	2242	4 x 0.80	1.88	42.30	2500	2.50	2.04	46	3733.00	282	329	500
240	Stranded	1.70	0.60	2.80	46.90	2869	4 x 0.80	2.04	47.20	3382	2.50	2.20	50.90	4531.00	327	392	500
300	Stranded	1.80	0.60	3	51.50	3505	4 x 0.80	2.20	51.80	4066	2.50	2.36	55.45	5339.00	369	452	500
400	Stranded	2	0.70	3.20	58.60	4427	4 x 0.80	2.52	58.50	5101	3.15	2.68	64	7115.00	420	526	500
500	Stranded	2.20	0.70	3.60	66	5681	4 x 0.80	2.68	65	6365	3.15	2.84	73	8597.00	478	612	250
630	Stranded	2.40	0.70	3.80	72	7125	4 x 0.80	2.84	73	7894	4	3	78	11295	542	712	250

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-6 "POLYCAB" THREE CORE COPPER CONDUCTOR, XLPE INSULATED,

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	13.00	210	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15	530	45	41	1000
4	Stranded	0.70	0.30	1.80	13.50	232	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	460	45	41	1000
6	Solid	0.70	0.30	1.80	14.00	280	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	640	56	52	1000
6	Stranded	0.70	0.30	1.80	15.00	299	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17	551	56	52	1000
10	Stranded	0.70	0.30	1.80	16.50	415	-NA-	-NA-	-NA-	-NA-	1.40	1.24	19	722	74	70	1000
16	Stranded	0.70	0.30	1.80	16.20	425	4 x 0.80	1.24	16.80	772.30	1.60	1.40	18.80	921	95	89	1000
25	Stranded	0.90	0.30	2	19.50	874	4 x 0.80	1.40	20.10	1102	1.60	1.40	21.70	1282	122	119	1000
35	Stranded	0.90	0.30	2	21.50	1150	4 x 0.80	1.40	22	1396	1.60	1.40	23.60	1596	146	147	1000
50	Stranded	1	0.30	2	24.50	1501	4 x 0.80	1.40	24.80	1767	1.60	1.56	26.80	2042	173	179	1000
70	Stranded	1.10	0.40	2.20	28.00	2118	4 x 0.80	1.56	28.50	2441	2	1.56	30.90	2888	212	226	500
95	Stranded	1.10	0.40	2.20	30.80	2821	4 x 0.80	1.56	31.30	3182	2	1.56	33.70	3686	254	279	500
120	Stranded	1.20	0.40	2.20	33.80	3496	4 x 0.80	1.56	34.30	3895	2	1.72	37	4455	287	320	500
150	Stranded	1.40	0.50	2.40	37.90	4322	4 x 0.80	1.72	38.30	4759	2	1.88	41.10	5396	321	365	500
185	Stranded	1.60	0.50	2.60	42	5377	4 x 0.80	1.88	42.30	5852	2.50	2.04	46	6868	362	422	500
240	Stranded	1.70	0.60	2.80	46.90	6992	4 x 0.80	2.04	47.20	7505	2.50	2.20	50.90	8654	418	500	500
300	Stranded	1.80	0.60	3	51.50	8683	4 x 0.80	2.20	51.80	9243	2.50	2.36	55.50	10526	469	574	500
400	Stranded	2	0.70	3.20	58.60	11029	4 x 0.80	2.52	58.50	11704	3.15	2.68	64	13718	528	662	250

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-7 "POLYCAB" THREE AND HALF CORE ALUMINIUM CONDUCTOR, XLPE INSULATED

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation Main / Neutral	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm		mm mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
25/16	Stranded	0.90 0.70	0.30	2	21.30	525	4 x 0.80	1.40	21.90	733	1.60	1.40	23.60	969	95	93	1000
35/16	Stranded	0.90 0.70	0.30	2	23.60	625	4 x 0.80	1.40	24.20	886	1.60	1.40	25.80	1139	114	114	1000
50/25	Stranded	1 0.90	0.30	2	26.80	800	4 x 0.80	1.40	27.40	1113	1.60	1.56	29.50	1387	134	138	1000
70/35	Stranded	1.10 0.90	0.40	2.20	31	1100	4 x 0.80	1.56	31.50	1451	2	1.56	34	1938	164	175	500
95/50	Stranded	1.10 1	0.40	2.20	34.30	1400	4 x 0.80	1.56	34.80	1796	2	1.56	37.20	2356	197	216	500
120/70	Stranded	1.20 1.10	0.40	2.20	37.50	1650	4 x 0.80	1.72	38.50	2199	2	1.72	41	2800	223	249	500
150/70	Stranded	1.40 1.10	0.50	2.40	41	2000	4 x 0.80	1.72	42	2579	2	1.88	45	3296	249	284	500
185/95	Stranded	1.60 1.10	0.50	2.60	46.50	2550	4 x 0.80	1.88	47.20	3156	2.50	2.04	50	4313	282	329	500
240/120	Stranded	1.70 1.20	0.60	2.80	52.50	3200	4 x 0.80	2.04	52.70	3913	2.50	2.20	56	5196	327	392	500
300/150	Stranded	1.80 1.40	0.60	3	56	4000	4 x 0.80	2.20	57	4693	2.50	2.36	61	6108	369	452	500
400/185	Stranded	2 1.60	0.70	3.40	64	5177	4 x 0.80	2.52	65	5890	3.15	2.68	70	8151	420	526	500
500/240	Stranded	2.20 1.70	0.70	3.60	72.50	6500	4 x 0.80	2.68	73.50	7400	3.15	2.84	77	9880	478	612	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-8 "POLYCAB" THREE AND HALF CORE COPPER CONDUCTOR, XLPE INSULATED

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation Main / Neutral	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm		mm mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
25/16	Stranded	0.90 0.70	0.30	2	21.30	1035	4 x 0.80	1.40	21.90	1272	1.60	1.40	23.60	1491	122	119	1000
35/16	Stranded	0.90 0.70	0.30	2	23.60	1311	4 x 0.80	1.40	24.20	1586	1.60	1.40	25.80	1824	146	147	1000
50/25	Stranded	1 0.90	0.30	2	26.80	1748	4 x 0.80	1.40	27.40	2061	1.60	1.56	29	2337	173	179	1000
70/35	Stranded	1.10 0.90	0.40	2.20	31	2460	4 x 0.80	1.56	31.50	2831	2	1.56	33.90	3296	212	226	500
95/50	Stranded	1.10 1	0.40	2.20	34.30	3287	4 x 0.80	1.56	34.80	3686	2	1.56	37.20	4237	254	279	500
120/70	Stranded	1.20 1.10	0.40	2.20	37.60	4142	4 x 0.80	1.72	38.50	4617	2	1.72	41	5225	287	320	500
150/70	Stranded	1.40 1.10	0.50	2.40	42.30	4987	4 x 0.80	1.72	42.70	5481	2	1.88	45	6194	321	365	500
185/95	Stranded	1.60 1.10	0.50	2.60	46.80	6279	4 x 0.80	1.88	47.20	6830	2.50	2.04	50	7989	362	422	500
240/120	Stranded	1.70 1.20	0.60	2.80	52.40	8122	4 x 0.80	2.04	52.70	8711	2.50	2.20	56	10003	418	500	500
300/150	Stranded	1.80 1.40	0.60	3	57	10079	4 x 0.80	2.20	57.90	10716	2.50	2.36	61	12131	469	574	500
400/185	Stranded	2 1.60	0.70	3.40	65	12834.5	4 x 0.80	2.52	65.50	13556	3.15	2.68	70	15817	528	662	250

The above data is approximate and subject to manufacturing tolerance.

* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-9 "POLYCAB" FOUR CORE ALUMINIUM CONDUCTOR, XLPE INSULATED,
UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm		mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	13.50	160	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.30	413	35	32	1000
4	Stranded	0.70	0.30	1.80	14.20	180	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	435	35	32	1000
6	Solid	0.70	0.30	1.80	14.70	200	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.50	473	46	42	1000
6	Stranded	0.70	0.30	1.80	15.50	215	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.30	506	46	42	1000
10	Solid	0.70	0.30	1.80	16.60	250	-NA-	-NA-	-NA-	-NA-	1.40	1.40	18.60	592	57	54	1000
10	Stranded	0.70	0.30	1.80	17.50	260	-NA-	-NA-	-NA-	-NA-	1.40	1.40	19.80	633	57	54	1000
16	Stranded	0.70	0.30	1.80	17.80	350	4 x 0.80	1.40	20	608	1.60	1.40	21	795	74	69	1000
25	Stranded	0.90	0.30	2	21	550	4 x 0.80	1.40	23	828.50	1.60	1.40	25	1045	95	93	500
35	Stranded	0.90	0.30	2	23.50	680	4 x 0.80	1.40	25	997	1.60	1.40	26.50	1244	114	114	500
50	Stranded	1	0.30	2	26	875	4 x 0.80	1.56	28	1235	1.60	1.56	29.50	1520	134	138	500
70	Stranded	1.10	0.40	2.20	30.50	1200	4 x 0.80	1.56	32	1615	2	1.56	34	2137	164	175	500
95	Stranded	1.10	0.40	2.20	33.50	1530	4 x 0.80	1.56	35	2014	2	1.72	38	2622	197	216	500
120	Stranded	1.20	0.50	2.40	37.50	1850	4 x 0.80	1.72	39	2403	2	1.88	42	3087	223	249	500
150	Stranded	1.40	0.50	2.60	42	2280	4 x 0.80	1.88	43	2888	2.50	2.04	47	3980	249	284	500
185	Stranded	1.60	0.50	2.80	46.50	2800	4 x 0.80	2.04	48	3505	2.50	2.20	52	4721	282	329	500
240	Stranded	1.70	0.60	3	52.50	3700	4 x 0.80	2.20	54	4389	2.50	2.36	57.50	5709	327	392	500
300	Stranded	1.80	0.70	3.20	58	4600	4 x 0.80	2.36	59.50	5291	3.15	2.52	64.50	7372	369	452	500
400	Stranded	2	0.70	3.60	65.50	6000	4 x 0.80	2.68	66.50	6583	3.15	2.84	71.50	8985	420	526	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-10 "POLYCAB" FOUR CORE COPPER CONDUCTOR, XLPE INSULATED,
UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1

650/1100 VOLTS

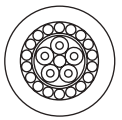
WEIGHT & DIMENSIONS

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
				Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimension of GI Round Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
4	Solid	0.70	0.30	1.80	13.50	260	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.30	503	45	41	1000
4	Stranded	0.70	0.30	1.80	14.20	280	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16	533	45	41	1000
6	Solid	0.70	0.30	1.80	14.70	350	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.50	618	56	52	1000
6	Stranded	0.70	0.30	1.80	15.50	365	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.30	646	56	52	1000
10	Stranded	0.70	0.30	1.80	17.80	510	-NA-	-NA-	-NA-	-NA-	1.40	1.40	19.80	870	74	70	1000
16	Stranded	0.70	0.30	1.80	17.50	741	4 x 0.80	1.40	20	969	1.60	1.40	21	1159	95	89	1000
25	Stranded	0.90	0.30	2	21	1140	4 x 0.80	1.40	23	1406	1.60	1.40	25	1615	122	119	500
35	Stranded	0.90	0.30	2	23.50	1491	4 x 0.80	1.40	25	1786	1.60	1.40	26.50	2033	146	147	500
50	Stranded	1	0.30	2	26	1957	4 x 0.80	1.56	28	2308	1.60	1.56	29.50	2593	173	179	500
70	Stranded	1.10	0.40	2.20	30.50	2774	4 x 0.80	1.56	32	3154	2	1.56	34	3686	212	226	500
95	Stranded	1.10	0.40	2.20	33.50	3714	4 x 0.80	1.56	35	4161	2	1.72	38	4769	254	279	500
120	Stranded	1.20	0.50	2.40	37.50	4645	4 x 0.80	1.72	39	5101	2	1.88	42	5795	287	320	500
150	Stranded	1.40	0.50	2.60	42	5719	4 x 0.80	1.88	43.50	6232	2.50	2.04	47	7324	321	365	500
185	Stranded	1.60	0.50	2.80	46.50	7125	4 x 0.80	2.04	48	7676	2.50	2.20	52	8901	362	422	500
240	Stranded	1.70	0.60	3	52.50	9253	4 x 0.80	2.20	54	9880	2.50	2.36	57.50	11210	418	500	500
300	Stranded	1.80	0.70	3.20	58	11524	4 x 0.80	2.36	59.50	12198	3.15	2.52	64.50	14279	469	574	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-11 "POLYCAB" 650/1100 VOLTS MULTICORE CONTROL CABLE WITH SOLID COPPER CONDUCTOR OF SIZE 1.5 SQ.MM XLPE INSULATED

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1



SOLID & STRANDED $

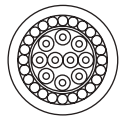
WEIGHT & DIMENSIONS

Number of Cores	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimen-sion of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimen-sion of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
2	0.70	0.30	1.80	10	140	-NA-	-NA-	-NA-	-NA-	1.40	1.24	11.90	288	31	27	1000
3	0.70	0.30	1.80	10.50	160	-NA-	-NA-	-NA-	-NA-	1.40	1.24	12.40	302	26	23	1000
4	0.70	0.30	1.80	11.50	171	-NA-	-NA-	-NA-	-NA-	1.40	1.24	13.10	349	26	23	1000
5	0.70	0.30	1.80	12.10	195	-NA-	-NA-	-NA-	-NA-	1.40	1.24	13.90	385	26	23	1000
6	0.70	0.30	1.80	12.90	222	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.70	432	23	20	1000
7	0.70	0.30	1.80	12.90	239	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.70	450	20	18	1000
8	0.70	0.30	1.80	14	275	-NA-	-NA-	-NA-	-NA-	1.40	1.24	16.50	494	17	15	1000
9	0.70	0.30	1.80	15	308	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.50	542	17	15	1000
10	0.70	0.30	1.80	15.70	327	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17.50	594	17	15	1000
12	0.70	0.30	1.80	16.10	365	-NA-	-NA-	-NA-	-NA-	1.40	1.24	18	646	16	14	1000
14	0.70	0.30	1.80	16.80	413	-NA-	-NA-	-NA-	-NA-	1.40	1.40	18.90	709	16	14	1000
16	0.70	0.30	1.80	17.70	460	4 x 0.80	1.40	18.50	651	1.60	1.40	20.10	807	14	12	1000
19	0.70	0.30	1.80	18.50	513	4 x 0.80	1.40	19.30	736	1.60	1.40	20.90	900	14	12	1000
21	0.70	0.30	2	19.80	560	4 x 0.80	1.40	20.20	788	1.60	1.40	21.80	960	12	11	500
24	0.70	0.30	2	21.70	627	4 x 0.80	1.40	22.10	874	1.60	1.40	23.70	1094	12	11	500
27	0.70	0.30	2	22.10	684	4 x 0.80	1.40	22.50	950	1.60	1.40	24.10	1152	11	9	500
30	0.70	0.30	2	22.80	741	4 x 0.80	1.40	23.20	1016	1.60	1.40	24.90	1229	11	9	500
33	0.70	0.30	2	23.70	807	4 x 0.80	1.40	24.10	1102	1.60	1.40	25.70	1322	11	9	500
37	0.70	0.30	2	24.50	874	4 x 0.80	1.40	24.90	1168	1.60	1.40	26.50	1415	11	9	500
44	0.70	0.30	2	27.30	1026	4 x 0.80	1.40	27.70	1358	1.60	1.56	29.70	1662	9	8	500
52	0.70	0.30	2	28.40	1178	4 x 0.80	1.56	29.20	1548	1.60	1.56	30.90	1833	9	8	500
61	0.70	0.40	2.20	30.70	1387	4 x 0.80	1.56	31.10	1757	2	1.56	33.50	2251	9	8	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

TABLE-12 "POLYCAB" 650/1100 VOLTS MULTICORE CONTROL WITH SOLID COPPER CONDUCTOR OF SIZE 2.5 SQ.MMXLPE INSULATED

UNARMOURED & ARMOURED CABLE CONFORMING TO IS 7098 PART-1



SOLID & STRANDED $

WEIGHT & DIMENSIONS

Number of Cores	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Unarmoured Cable			Formed Wire / Strip Armoured Cable				Round Wire Armoured Cable				Current Rating.*		*Normal Delivery Length
			Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimen-sion of GI Flat Strip	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	Nominal Dimen-sion of GI Round Wire	Minimum Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable	In Ground	In Air	
Sq.mm	mm	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	mm	mm	mm	Kgs./Km	Amps.	Amps.	Mtrs.
2	0.70	0.30	1.80	10.90	173	-NA-	-NA-	-NA-	-NA-	1.40	1.24	12.70	342	41	36	1000
3	0.70	0.30	1.80	11.40	202	-NA-	-NA-	-NA-	-NA-	1.40	1.24	13.20	360	34	30	1000
4	0.70	0.30	1.80	12.20	218	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14	406	34	30	1000
5	0.70	0.30	1.80	13.10	254	-NA-	-NA-	-NA-	-NA-	1.40	1.24	14.90	464	34	30	1000
6	0.70	0.30	1.80	14	291	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.90	522	31	27	1000
7	0.70	0.30	1.80	14	313	-NA-	-NA-	-NA-	-NA-	1.40	1.24	15.90	549	27	23	1000
8	0.70	0.30	1.80	16	342	-NA-	-NA-	-NA-	-NA-	1.40	1.24	17	608	23	20	1000
9	0.70	0.30	1.80	16.50	385	-NA-	-NA-	-NA-	-NA-	1.40	1.40	18.50	684	23	20	1000
10	0.70	0.30	1.80	17.20	427	4 x 0.80	1.24	17.80	624	1.60	1.40	19.60	789	23	20	1000
12	0.70	0.30	1.80	17.70	484	4 x 0.80	1.40	18.50	694	1.60	1.40	20.10	865	20	18	1000
14	0.70	0.30	1.80	18.50	551	4 x 0.80	1.40	19.30	780	1.60	1.40	20.90	944	20	18	1000
16	0.70	0.30	2	19.80	636	4 x 0.80	1.40	20.20	867	1.60	1.40	21.90	1023	18	16	1000
19	0.70	0.30	2	20.80	722	4 x 0.80	1.40	21.20	960	1.60	1.40	22.80	1147	18	16	1000
21	0.70	0.30	2	21.80	769	4 x 0.80	1.40	22.20	1016	1.60	1.40	23.90	1243	16	14	500
24	0.70	0.30	2	24	864	4 x 0.80	1.40	24.40	1159	1.60	1.40	26	1387	16	14	500
27	0.70	0.30	2	24.50	950	4 x 0.80	1.40	24.90	1235	1.60	1.40	26.50	1482	14	13	500
30	0.70	0.30	2	25.30	1035	4 x 0.80	1.40	25.70	1349	1.60	1.40	27.30	1586	14	13	500
33	0.70	0.30	2	26.20	1130	4 x 0.80	1.40	26.60	1437	1.60	1.56	28.60	1729	14	13	500
37	0.70	0.30	2	27.20	1235	4 x 0.80	1.40	27.60	1567	1.60	1.56	29.60	1852	14	13	500
44	0.70	0.40	2.20	30.90	1501	4 x 0.80	1.56	31.30	1862	2	1.56	33.70	2356	12	11	500
52	0.70	0.40	2.20	32.20	1719	4 x 0.80	1.56	32.60	2109	2	1.56	35	2631	12	11	500
61	0.70	0.40	2.20	34.10	1976	4 x 0.80	1.56	34.50	2375	2	1.56	36.90	2926	12	11	500

The above data is approximate and subject to manufacturing tolerance.
* Delivery Length tolerance is±5%. Length more than normal as per customer request.

Table 1 Rating factors for variation in ambient air temperature for cables in free air

Maximum conductor temperature	Ambient air temperature °C							
°C	15	30	35	40	45	50	55	60
90	1.14	1.10	1.05	1	0.96	0.89	0.87	0.77

Table 2 Rating factors for variation in ground temperature for direct buried cables

Maximum conductor temperature	Ground temperature °C							
°C	15	20	25	30	35	40	45	50
90	1.12	1.08	1.04	1	0.96	0.91	0.87	0.82

Table 3 Rating factors for variation in ground temperature for cables in ducts

Maximum conductor temperature	Ground temperature °C							
°C	15	20	25	30	35	40	45	50
90	1.12	1.08	1.04	1	0.96	0.91	0.87	0.82

Table 4 Rating factors for depths of laying for direct buried cables

Depth of laying mm	Up to 25 mm²		Above 25 mm² Up to 300 mm²		Above 300 mm²	
	Single-core	Multi-core	Single-core	Multi-core	Single-core	Multi-core
750	1	1	1	1	1	1
900	0.98	0.98	0.98	0.98	0.98	0.98
1050	0.97	0.98	0.96	0.97	0.96	0.96
1200	0.96	0.97	0.95	0.95	0.94	0.95
1500	0.94	0.95	0.93	0.93	0.92	0.93
1800	0.93	0.93	0.91	0.92	0.9	0.91
2000	0.92	0.93	0.90	0.91	0.89	0.90
2500	0.90	0.92	0.89	0.89	0.87	0.88
3000	0.90	0.90	0.87	0.88	0.86	0.87

Table 5 Rating factors for depths of laying for cables in ducts

Depth of laying mm	Up to 25 mm²		Above 25 mm² Up to 300 mm²		Above 300 mm²	
	Single-core	Multi-core	Single-core	Multi-core	Single-core	Multi-core
750	1	1	1	1	1	1
900	0.98	0.98	0.98	0.99	0.98	0.98
1050	0.97	0.98	0.96	0.97	0.96	0.97
1200	0.96	0.97	0.95	0.97	0.94	0.96
1500	0.94	0.96	0.93	0.95	0.92	0.94
1800	0.93	0.95	0.91	0.94	0.90	0.93
2000	0.92	0.94	0.90	0.93	0.89	0.92
2500	0.90	0.93	0.88	0.92	0.87	0.91
3000	0.89	0.92	0.87	0.91	0.86	0.90

Table 6 Rating factors for variations in soil thermal resistivities for two single-core cables laid direct in ground

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.16	1.09	1	0.91	0.81	0.75
2.50	1.16	1.09	1	0.89	0.81	0.75
4	1.17	1.09	1	0.89	0.81	0.75
6	1.17	1.09	1	0.89	0.81	0.75
10	1.17	1.09	1	0.89	0.80	0.74
16	1.17	1.09	1	0.89	0.80	0.74
25	1.18	1.09	1	0.89	0.80	0.74
35	1.18	1.10	1	0.88	0.80	0.73
50	1.19	1.10	1	0.88	0.80	0.73
70	1.19	1.10	1	0.88	0.80	0.73
95	1.19	1.10	1	0.88	0.79	0.73
120	1.19	1.10	1	0.88	0.79	0.73
150	1.19	1.10	1	0.88	0.79	0.73
185	1.19	1.10	1	0.88	0.79	0.72
240	1.20	1.10	1	0.88	0.79	0.72
300	1.20	1.10	1	0.88	0.79	0.72
400	1.20	1.10	1	0.88	0.79	0.72
500	1.20	1.11	1	0.87	0.79	0.72
630	1.20	1.11	1	0.87	0.79	0.72
800	1.20	1.11	1	0.87	0.79	0.72
1000	1.20	1.11	1	0.87	0.79	0.72

Table 7 Rating factors for variations in soil thermal resistivities for two single-core cables laid in buried duct

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.16	1.09	1	0.91	0.81	0.75
2.50	1.16	1.09	1	0.89	0.81	0.75
4	1.17	1.09	1	0.89	0.81	0.75
6	1.17	1.09	1	0.89	0.81	0.75
10	1.17	1.09	1	0.89	0.80	0.74
16	1.17	1.09	1	0.89	0.80	0.74
25	1.18	1.09	1	0.89	0.80	0.74
35	1.18	1.10	1	0.88	0.80	0.73
50	1.19	1.10	1	0.88	0.80	0.73
70	1.19	1.10	1	0.88	0.80	0.73
95	1.19	1.10	1	0.88	0.79	0.73
120	1.19	1.10	1	0.88	0.79	0.73
150	1.19	1.10	1	0.88	0.79	0.73
185	1.19	1.10	1	0.88	0.79	0.72
240	1.20	1.10	1	0.88	0.79	0.72
300	1.20	1.10	1	0.88	0.79	0.72
400	1.20	1.10	1	0.88	0.79	0.72
500	1.20	1.11	1	0.87	0.79	0.72
630	1.20	1.11	1	0.87	0.79	0.72
800	1.20	1.11	1	0.87	0.79	0.72
1000	1.20	1.11	1	0.87	0.79	0.72

Table 8 Rating factors for variations in soil thermal resistivities for three single-core cables laid direct in ground

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.14	1.07	1	0.89	0.80	0.75
2.50	1.17	1.08	1	0.89	0.80	0.75
4	1.17	1.09	1	0.88	0.79	0.73
6	1.17	1.09	1	0.88	0.79	0.73
10	1.18	1.09	1	0.88	0.79	0.73
16	1.18	1.10	1	0.88	0.79	0.72
25	1.19	1.10	1	0.88	0.79	0.72
35	1.19	1.10	1	0.88	0.79	0.72
50	1.19	1.10	1	0.88	0.79	0.72
70	1.20	1.11	1	0.88	0.79	0.72
95	1.20	1.11	1	0.87	0.79	0.72
120	1.20	1.11	1	0.87	0.79	0.72
150	1.20	1.11	1	0.87	0.79	0.72
185	1.20	1.11	1	0.87	0.78	0.72
240	1.20	1.11	1	0.87	0.78	0.72
300	1.20	1.11	1	0.87	0.78	0.72
400	1.20	1.11	1	0.87	0.78	0.72
500	1.21	1.11	1	0.87	0.78	0.72
630	1.21	1.11	1	0.87	0.78	0.72
800	1.21	1.11	1	0.87	0.78	0.72
1000	1.21	1.11	1	0.87	0.78	0.72

Table 9 Rating factors for variations in soil thermal resistivities for three single-core cables laid in buried duct

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.08	1.04	1	0.92	0.88	0.84
2.50	1.08	1.05	1	0.93	0.88	0.84
4	1.08	1.05	1	0.93	0.87	0.83
6	1.09	1.06	1	0.93	0.87	0.83
10	1.10	1.06	1	0.93	0.87	0.82
16	1.10	1.06	1	0.93	0.87	0.82
25	1.10	1.06	1	0.93	0.87	0.82
35	1.10	1.06	1	0.93	0.86	0.81
50	1.11	1.06	1	0.92	0.86	0.81
70	1.11	1.06	1	0.92	0.86	0.80
95	1.12	1.06	1	0.92	0.85	0.80
120	1.12	1.06	1	0.91	0.85	0.79
150	1.12	1.07	1	0.91	0.85	0.79
185	1.12	1.07	1	0.91	0.84	0.79
240	1.12	1.07	1	0.91	0.84	0.78
300	1.13	1.07	1	0.91	0.84	0.78
400	1.13	1.07	1	0.91	0.84	0.78
500	1.13	1.07	1	0.90	0.83	0.78
630	1.13	1.07	1	0.90	0.83	0.77
800	1.14	1.08	1	0.90	0.83	0.77
1000	1.14	1.08	1	0.90	0.82	0.77

Table 10 Rating factors for variations in soil thermal resistivities for multi-core cables laid direct in ground

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.14	1.08	1	0.90	0.83	0.77
2.50	1.15	1.08	1	0.90	0.82	0.76
4	1.15	1.08	1	0.89	0.82	0.76
6	1.16	1.09	1	0.89	0.81	0.75
10	1.16	1.09	1	0.89	0.81	0.75
16	1.17	1.09	1	0.89	0.80	0.74
25	1.17	1.09	1	0.89	0.80	0.74
35	1.18	1.10	1	0.88	0.80	0.74
50	1.18	1.10	1	0.88	0.80	0.74
70	1.18	1.10	1	0.88	0.80	0.74
95	1.18	1.10	1	0.88	0.80	0.73
120	1.18	1.10	1	0.88	0.80	0.73
150	1.18	1.10	1	0.88	0.80	0.73
185	1.18	1.10	1	0.88	0.80	0.73
240	1.19	1.10	1	0.88	0.80	0.73
300	1.19	1.10	1	0.88	0.80	0.73
400	1.19	1.10	1	0.88	0.80	0.73
500	1.19	1.10	1	0.88	0.80	0.73
630	1.19	1.10	1	0.88	0.80	0.73

Table 11 Rating factors for variations in soil thermal resistivities for multi-core cables laid in buried duct

Nominal area of conductor mm²	Values of soil thermal resistivity K.m/W					
	1	1.2	1.5	2	2.5	3
1.50	1.05	1.03	1	0.96	0.92	0.88
2.50	1.05	1.03	1	0.95	0.91	0.88
4	1.06	1.03	1	0.95	0.91	0.87
6	1.06	1.03	1	0.95	0.91	0.87
10	1.06	1.04	1	0.95	0.90	0.86
16	1.06	1.04	1	0.95	0.90	0.86
25	1.07	1.04	1	0.95	0.90	0.86
35	1.07	1.04	1	0.94	0.90	0.85
50	1.07	1.04	1	0.94	0.89	0.85
70	1.07	1.04	1	0.94	0.89	0.84
95	1.08	1.04	1	0.94	0.88	0.84
120	1.08	1.05	1	0.94	0.88	0.84
150	1.08	1.05	1	0.93	0.88	0.83
185	1.08	1.05	1	0.93	0.88	0.83
240	1.09	1.05	1	0.93	0.87	0.83
300	1.09	1.05	1	0.93	0.87	0.82
400	1.09	1.05	1	0.93	0.87	0.82
500	1.09	1.05	1	0.93	0.87	0.82
630	1.10	1.06	1	0.92	0.86	0.81

Table 12 Current rating (D.C.) for Two single core cable with XLPE Insulation and rated voltage 1500 V

Nominal area of conductor mm²	Buried Direct in the Ground		In Single-Way Ducts		In Air	
	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium
1.50	32	26	27	22	28	22
2.50	42	32	36	28	37	28
4	54		46	36	48	38
6	67	55	57	47	61	50
10	90	69	76	58	83	64
16	115	89	97	75	108	84
25	148	115	124	96	144	112
35	177	137	148	115	176	137
50	208	161	174	135	212	165
70	255	198	213	165	269	209
95	314	243	258	200	342	265
120	358	278	293	227	399	310
150	401	310	328	254	455	352
185	455	352	371	288	528	409
240	528	409	431	334	628	487
300	598	463	487	377	726	561
400	687	533	558	433	857	664
500	790	613	640	497	1008	1782
630	911	705	736	570	1189	921
800	1046	809	843	652	1398	1082
1000	1190	923	956	741	1629	1264

Table 13 Current rating (D.C.) for Two core cable with XLPE Insulation and rated voltage 1500 V

Nominal area of conductor mm²	Buried Direct in the Ground		In Single-Way Ducts		In Air	
	Copper	Aluminium	Copper	Aluminium	Copper	Aluminium
1.50	31	26	27	22	27	22
2.50	41	32	35	27	36	28
4	54	42	45	36	48	38
6	67	55	56	46	61	50
10	89	68	75	57	83	64
16	115	89	96	74	108	84
25	147	114	122	95	141	109
35	176	137	146	113	172	133
50	209	162	174	134	209	162
70	256	198	213	165	265	205
95	306	237	255	198	326	253
120	347	269	290	225	375	290
150	389	301	326	252	430	332
185	441	342	370	287	498	386
240	513	397	432	334	595	461
300	581	449	490	379	689	533
400	666	516	563	436	807	626
500	764	593	647	502	948	735
630	883	684	749	580	1123	870

Table 1 Group rating factors for circuits of two single-core cables laid direct in the ground, horizontal formation

Number of circuits	Spacing between group centres mm				
	Touching	150	300	450	600
2	0.80	0.85	0.90	0.92	0.95
3	0.70	0.78	0.85	0.88	0.91
4	0.64	0.73	0.81	0.86	0.89
5	0.59	0.70	0.79	0.84	0.88
6	0.55	0.67	0.77	0.83	0.87
7	0.53	0.65	0.76	0.82	0.86
8	0.51	0.64	0.75	0.82	0.86
9	0.49	0.63	0.74	0.81	0.85
10	0.48	0.63	0.74	0.81	0.85
11	0.47	0.62	0.73	0.80	0.84
12	0.46	0.61	0.73	0.80	0.84

Table 2 Group rating factors for circuits of three single-core cables laid direct in the ground, horizontal formation

Number of circuits	Spacing between group centres mm				
	Touching	150	300	450	600
2	0.77	0.81	0.86	0.88	0.89
3	0.67	0.71	0.78	0.81	0.83
4	0.61	0.64	0.72	0.76	0.80
5	0.57	0.60	0.69	0.74	0.77
6	0.53	0.57	0.66	0.72	0.75
7	0.51	0.55	0.64	0.70	0.74
8	0.49	0.53	0.63	0.69	0.73
9	0.47	0.52	0.62	0.68	0.73
10	0.45	0.51	0.61	0.67	0.72
11	0.44	0.50	0.60	0.66	0.72
12	0.43	0.49	0.59	0.65	0.71

Table 3 Group rating factors for circuits of three single-core cables in single-way ducts

Number of circuits	Spacing between duct group centres mm				
	Touching	150	300	450	600
2	0.78	0.83	0.87	0.90	0.91
3	0.66	0.73	0.78	0.82	0.85
4	0.59	0.67	0.74	0.78	0.82
5	0.55	0.63	0.70	0.76	0.80
6	0.51	0.61	0.68	0.74	0.78
7	0.48	0.58	0.66	0.73	0.77
8	0.46	0.57	0.65	0.72	0.76
9	0.44	0.55	0.64	0.71	0.76
10	0.43	0.54	0.63	0.70	-
11	0.42	0.53	0.62	0.69	-
12	0.40	0.51	0.61	0.69	-

Table 4 Group rating factors for multi-core cables laid direct in the ground, in tier formation

Number of cables	Number of tiers	Spacing between cable centres mm				
		Touching	150	300	450	600
2	1	0.80	0.84	0.87	0.90	0.91
3	1	0.68	0.74	0.79	0.83	0.86
4	2	0.60	0.66	0.73	0.77	0.79
5	2	0.55	0.61	0.68	0.71	0.73
6	2	0.51	0.57	0.63	0.67	0.69
7	3	0.48	0.54	0.59	0.63	0.64
8	3	0.46	0.51	0.56	0.60	0.61
9	3	0.44	0.48	0.53	0.57	0.58
10	4	0.42	0.47	0.52	0.55	0.56
11	4	0.41	0.46	0.50	0.54	0.55
12	4	0.40	0.45	0.49	0.53	0.54

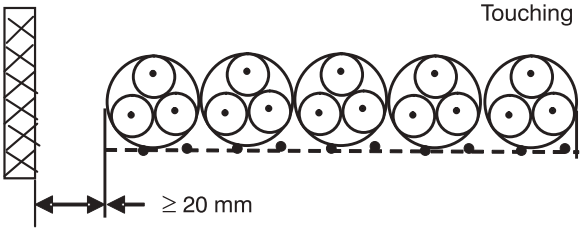
Table 5 Group rating factors for multi-core cables laid direct in the ground, in horizontal formation

Number of cables	Spacing between cable centres mm				
	Touching	150	300	450	600
2	0.80	0.84	0.87	0.90	0.91
3	0.68	0.74	0.79	0.83	0.86
4	0.62	0.69	0.75	0.80	0.83
5	0.58	0.65	0.72	0.77	0.80
6	0.55	0.62	0.69	0.75	0.78
7	0.52	0.59	0.67	0.73	0.77
8	0.50	0.57	0.66	0.72	0.75
9	0.48	0.55	0.65	0.71	0.75
10	0.46	0.54	0.64	0.70	0.74
11	0.45	0.53	0.63	0.70	0.74
12	0.44	0.52	0.62	0.69	0.73

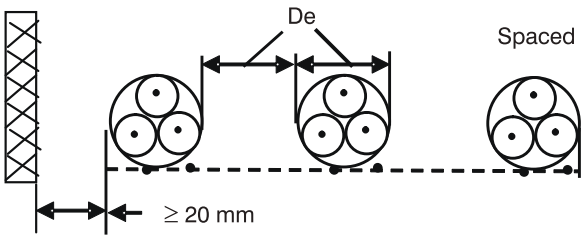
Table 6 Group rating factors for three-core cables in single way ducts in horizontal formation

Number of cables	Spacing between duct group centres mm				
	Touching	150	300	450	600
2	0.85	0.87	0.90	0.92	0.94
3	0.75	0.79	0.83	0.86	0.88
4	0.69	0.74	0.79	0.83	0.86
5	0.65	0.70	0.76	0.80	0.84
6	0.62	0.67	0.73	0.79	0.83
7	0.59	0.65	0.72	0.78	0.82
8	0.57	0.63	0.70	0.77	0.81
9	0.55	0.62	0.69	0.76	0.80
10	0.54	0.61	0.68	0.75	-
11	0.52	0.60	0.68	0.75	-
12	0.51	0.59	0.67	0.74	-

Table 7 Group rating factors for multi-core cables in air on perforated trays



Number of trays	Number of Cables					
	1	2	3	4	6	9
1	1	0.88	0.82	0.79	0.76	0.73
2	1	0.87	0.80	0.77	0.73	0.68
3	1	0.86	0.79	0.76	0.71	0.66

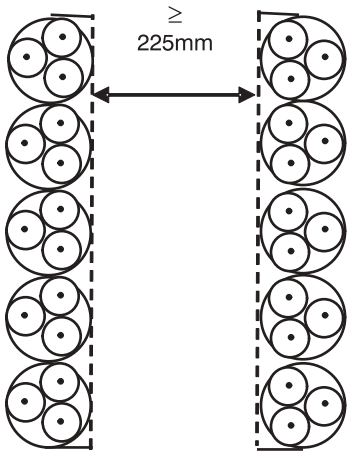


Number of trays	Number of Cables					
	1	2	3	4	6	9
1	1	1	0.98	0.95	0.91	-
2	1	0.99	0.96	0.92	0.87	-
3	1	0.98	0.95	0.91	0.85	-

NOTE: 1 Factors apply to single layer groups of cables as shown above. Factors for cables installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

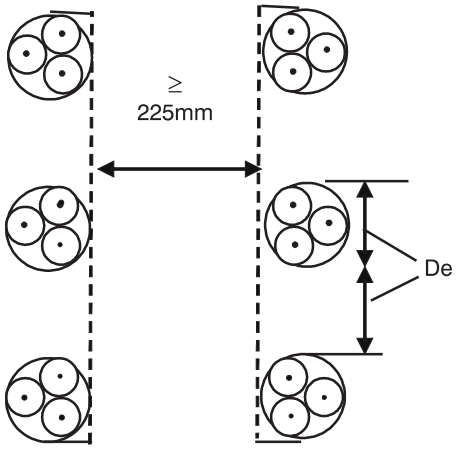
NOTE: 2 Factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.

Table 8 Group rating factors for multi-core cables in air on vertical perforated trays



Touching

Number of trays	Number of Cables					
	1	2	3	4	6	9
1	1	0.88	0.82	0.78	0.73	0.72
2	1	0.88	0.81	0.76	0.71	0.70

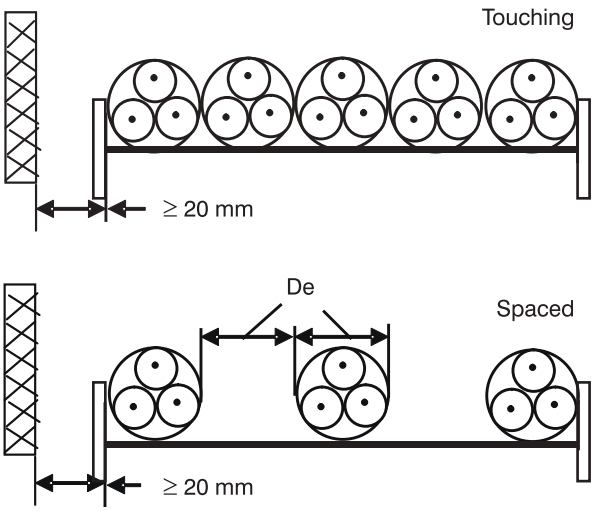


Spaced

Number of trays	Number of Cables					
	1	2	3	4	6	9
1	1	0.91	0.89	0.88	0.87	-
2	1	0.91	0.88	0.87	0.85	-

NOTE: 1 Factors are given for horizontal spacing between trays of 225 mm with trays mounted back to back. For closer spacing, the factors should be reduced.

Table 9 Group rating factors for multi-core cables in air on ladder supports, cleats, etc

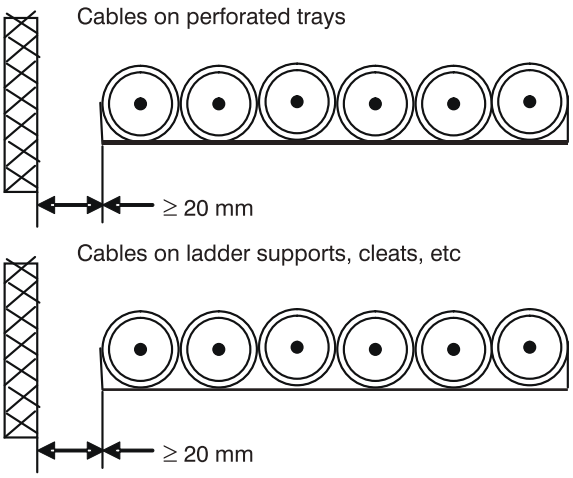


Number of trays	Number of Cables					
	1	2	3	4	6	9
1	1	0.87	0.82	0.80	0.79	0.78
2	1	0.86	0.80	0.78	0.76	0.73
3	1	0.85	0.79	0.76	0.73	0.70
1	1	1	1	1	1	-
2	1	0.99	0.98	0.97	0.96	-
3	1	0.98	0.97	0.96	0.93	-

NOTE: 1 Factors apply to single layer groups of cables as shown above. Factors for cables installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

NOTE: 2 Factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.

Table 10 Group rating factors to be applied for circuits of three single core cables in air flat touching



Number of trays	Number of three-phase circuits		
	1	2	3
1	0.98	0.91	0.87
2	0.96	0.87	0.81
3	0.95	0.85	0.78
1	1	0.97	0.96
2	0.98	0.93	0.89
3	0.97	0.90	0.86

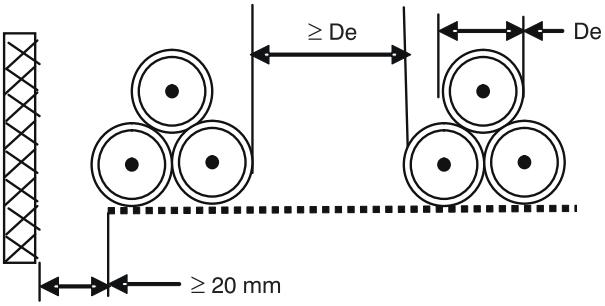
NOTE: 1 Factors are given for single layers of cables as shown above. Factors for cables installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

NOTE: 2 Factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.

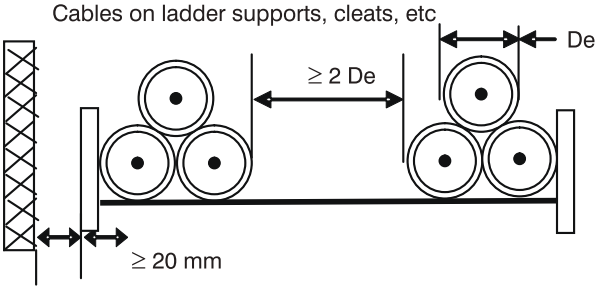
NOTE: 3 For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.

Table 11 Group rating to be applied for circuits of three single core cables in air on perforated trays and ladder air on perforated trays and ladder supports in trefoil formation

Cables on perforated trays



Cables on ladder supports, cleats, etc



Number of trays	Number of three-phase circuits		
	1	2	3
1	1	0.98	0.96
2	0.97	0.93	0.89
3	0.96	0.92	0.86
1	1	1	1
2	0.97	0.95	0.93
3	0.96	0.94	0.90

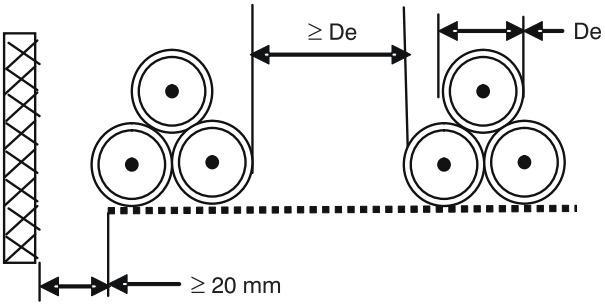
NOTE: 1 Factors are given for single layers of trefoil groups as shown above. Factors for trefoil groups installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

NOTE: 2 Factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.

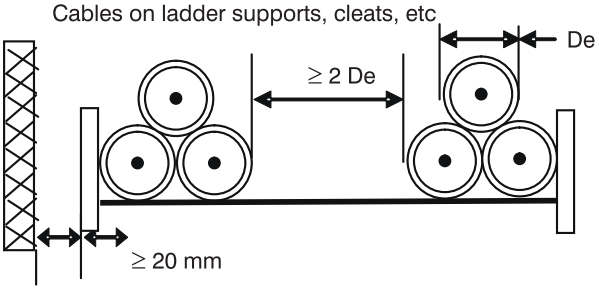
NOTE: 3 For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.

Table 11 Group rating to be applied for circuits of three single core cables in air on perforated trays and ladder air on perforated trays and ladder supports in trefoil formation

Cables on perforated trays



Cables on ladder supports, cleats, etc



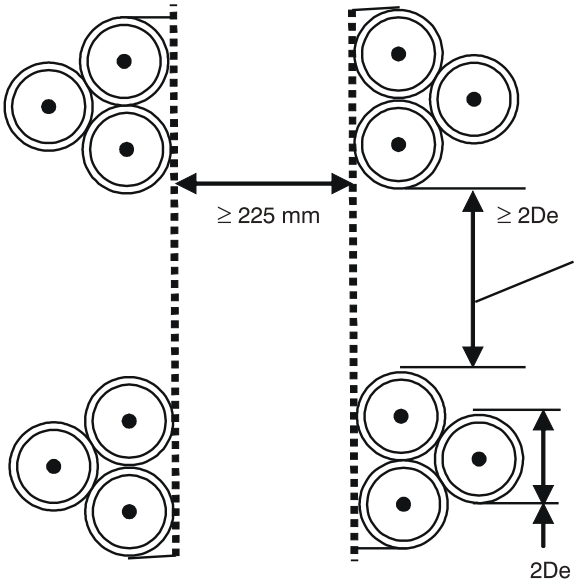
Number of trays	Number of three-phase circuits		
	1	2	3
1	1	0.98	0.96
2	0.97	0.93	0.89
3	0.96	0.92	0.86
1	1	1	1
2	0.97	0.95	0.93
3	0.96	0.94	0.90

NOTE: 1 Factors are given for single layers of trefoil groups as shown above. Factors for trefoil groups installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

NOTE: 2 Factors are given for vertical spacing between trays of 300 mm and at least 20 mm between trays and wall. For closer spacing, the factors should be reduced.

NOTE: 3 For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.

Table 12 Group rating factors to be applied for circuits of three single core cables in air on vertical perforated trays in trefoil formation



Number of trays	Number of three-phase circuits		
	1	2	3
1	1	0.91	0.89
2	1	0.90	0.86

NOTE: 1 Factors are given for single layers of trefoil groups as shown above. Factors for trefoil groups installed in more than one layer touching each other will be significantly lower and must be determined by an appropriate method.

NOTE: 2 Factors are given for horizontal spacing between vertical trays of 225 mm with trays mounted back to back. For closer spacing, the factors should be reduced.

NOTE: 3 For circuits having more than one cable in parallel per phase, each three phase set of conductors should be considered as a circuit for the purpose of this table.

A. Cable Inspection

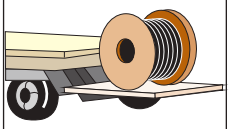
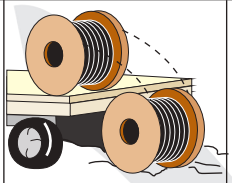
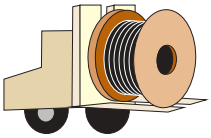
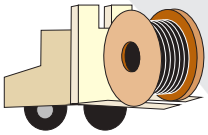
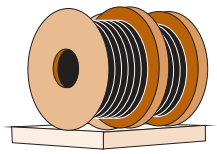
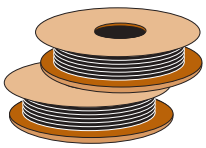
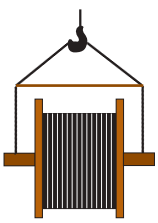
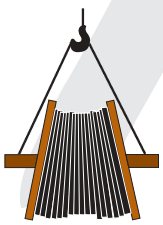
Inspect every cable reel for damage before accepting the shipment. Be particularly alert for cable damage if:

1. A reel lying flat on its side
2. Several reels are stacked
3. Other freight is stacked on a reel
4. Nails have been driven into reel flanges to secure shipping blocks
5. A reel flange is damaged
6. A cable covering is removed, stained or damaged
7. A cable end seal is removed or damaged. A reel has been dropped (hidden damage likely)

B. Cable Handling & Storage

Damage to cables can occur due to the incorrect handling to which the drum sand cables may be subjected; causing breakdown of the drum flanges and in exceptional cases, movement of the drum barrel takes place. Once this breakdown of the drum occurs, the cable is immediately exposed to damage. Cables damaged during handling & storage can cause service failures when the subject cable is put to use.

Thus the following is a list of Dos and Don'ts that should be followed while .handling and storing the cables before it is put to use.

Dos		Donts	
	When off loading reels from a truck, lower reels carefully using a hydraulic gate, hoist or fork lift truck.		Never drop reels. If reels must be rolled, roll in opposite direction of the cable wraps to keep cable from loosening on the reel.
	If a fork lift is used, approach the reel from the flange side. Position the forks such that the reel is lifted by both reel flanges. Also consideration should be given to, traffic patterns during off-loading & damage during the time in storage.		Do not allow the lift forks to contact the cable. Care must be taken by the fork lift operator not to make sudden turns or stops.
	Cable reels should be stored on hard surface resting on the flanges edge(flanges vertical). Align reel flange to flange and, if possible, arrange so that first in is first out.		Multiple reels stacked on top of each other (Pancake Storage) is not recommended for cable drums.The weight of the stack cab total thousands of kgs. can create an enormous load on the bottom reel. Also, damage to three land/ or cable will likely occur when the reel is flipped for transit. A concentration of stress on the reel flange may cause it to break and subsequently damage the cable.
	When using a hoist, install a mandrel through the reel arbor holes and attach asling. Use a spreader bar approximately 6 inches longer than the overall reel width placed between the sling ends just above the reel flanges.		This may lead to the bending of the reel flanges and mashing the cable

POLYCAB

Connection Zindagi Ka

Regional & Branch Offices:

EAST

BHUBANESWAR : A-167, Unit No. 102, First Floor, The Metropolis, Near Sparsh Hospital, Saheed Nagar, Bhubaneswar - 751007, Odisha. Tel. 0674 2549960

GUWAHATI : 4th Floor, Mayur Garden, Near ABC Bus Stop, G.S. Road, Guwahati - 781005, Assam, India.

KOLKATA : Unit No. 1108, 11th Floor, Godrej Genesis, Plot-XI, Block EP & GP Salt Lake, Sector - V, Kolkata - 700091.

PATNA : L-302, 303, Dumraon Palace, 3rd Floor, Fraser Road, Near Dakbangla Crossing, Patna - 800001.

RANCHI : Panchwati Tower Unit No. 3, Gr. Floor Harmu Road, Ranchi - 834001. Tel. 0651 2284040

NORTH

CHANDIGARH : S.C.O. 10-11-12, 1st Floor, Sec 17 B, Chandigarh - 160017. Tel. 0172 5001548, 49

LUCKNOW : Shalimar Square, Office No - 09, 126/31, B. N. Road, Lalbagh, Hazratganj, Lucknow - 226001. Tel. 0522 4022324

NOIDA : B9, 1st Floor Sector - 3, Near Bajaj Bhawan, Noida - 201301. Tel. 0120 4848550

DEHRADUN : 57 GDG Tower Adjoining Hotel Calista Patel Nagar Dehradun, Uttrakhand - 248001 Tel. 0135 2728758

JAIPUR : 501 & 502, 5th Floor, K.J City Tower, Plot No. E-2, Ashok Marg, Near Ahinsha Circle, C-Scheme, Jaipur, Rajasthan - 302001. Tel. 0141 2216097

WEST

AHMEDABAD : 102-1st Floor, Hrishikesh, Nr. IDBI Bank Cross Road, Gulbai Tekra, Ahmedabad - 380006. Tel. 079 26301655

INDORE : B-12, New Siyaganj, Patthar Godam Road, Indore - 452003. Tel. 0731 4033357

WEST

PUNE : Off No. 36, Sangam Project Phase 2, Near RTO Pune, Near Sangam Bridge, Pune - 411001.
Tel. 020 26058277

RAIPUR : 506, 5th Floor, Wallfort Ozone, Near Fafadih Chowk, Raipur - 492001, Tel. 0771 2582925, 4221686

NAGPUR : Shree Ganesh Enclave, Plot No. 12, 1st Floor, Near ST Stand, Ganeshpeth, Nagpur - 440018

SOUTH

KOCHI : 34/138 C, NH By-Pass Road, Edappally, Kochi - 682024. Tel. 0484 2803285

BENGALURU : B-78, No. 18, 4th Main Road, KSSIDC Industrial Estate, 6th Block, Rajajinagar, Bangalore - 560010.
Tel. 080 23102172 / 8354

HUBLI : Shop No. 99 to 119, 4th floor, Satellite Complex, Koppikar Road, Hubli - 580020, Tel. 0836 4259866

COIMBATORE : Kaanchan, Gr. Floor, No. 9, North Huzur Road, Coimbatore - 641018. Tel. 0422 2305339

CHENNAI : Gee Gee Universal, 8th Floor, No. 2, Mc Nichols Road, 3rd Lane, Near Metha Hospital, Chetpet, Chennai - 600 031.
Tel. 044 42817272

SECUNDERABAD : 208-209, 2nd Floor Bhuvana Towers, S. D. Road, Secunderabad - 500003, Tel. 040 66326228

VIJAYAWADA : Plot No. 77, House No. 40-5/7-6, 3rd Cross, Municipal Employees Colony, Vijayawada - 520010.
Tel. 0866 6601666

VISAKHAPATNAM : 3rd Floor, Krishna Enclave, Seethammapeta Main Road, Visakhapatnam - 530016.

Corporate Office:
POLYCAB INDIA LIMITED **(formerly known as 'Polycab Wires Limited')**
Polycab House, 771, Mogul Lane, Mahim (W), Mumbai - 400 016, Maharashtra (India)
Ph.: +91-22-2432 7070/4, 6735 1400, Email: enquiry@polycab.com, Toll Free No.: 1800 267 0008, www.polycab.com

XLPE Cable / Jan / 2020

HIGH TENSION **XLPE** CABLES

www.polycab.com

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Connection Zindagi Ka

Year 2020


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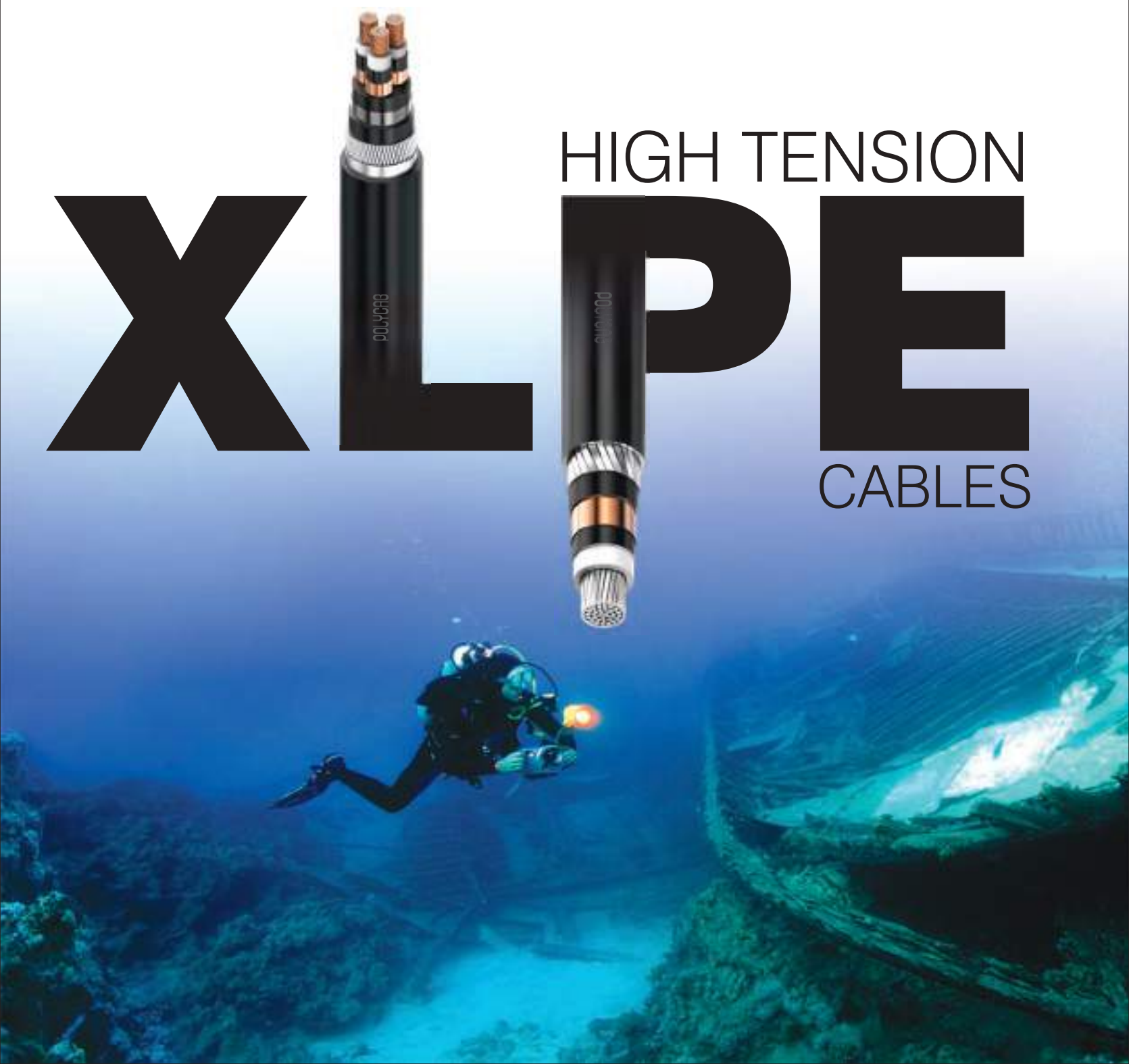
HIGH TENSION XLPE CABLES



COMPANY PROFILE

POLYCAB AN ISO 9001:2008, ISO 14001:2004, OHSAS 18001:2007 COMPANY IS INDIA'S NO.1 CABLES & WIRES COMPANY WITH A GLORIOUS TRACK RECORD OF OVER 4 DECADES. OUR MANUFACTURING FACILITIES AT HALOL (VADODARA), DAMAN, NASHIK AND ROORKEE IN INDIA, ADDRESSES TO THE SPECIFIC NEEDS WITH STATE-OF-THE-ART MACHINERY AND TECHNOLOGY.

POLYCAB'S TURNOVER HAS CROSSED INR 6000 CRORE'S IN THE FISCAL YEAR 2016-17. POLYCAB DERIVES ITS STRENGTH FROM ITS CUSTOMERS AND THOSE BEING IN SECTORS LIKE UTILITIES, POWER GENERATION, TRANSMISSION & DISTRIBUTION, PETROLEUM & OIL REFINERIES, OEMs, EPC CONTRACTORS, STEEL & METAL, CEMENT, CHEMICAL, ATOMIC ENERGY, NUCLEAR PLANTS, AS WELL AS GOVERNMENT PARTNERS LIKE BSNL, RAILWAYS AND PRIVATE TELECOM OPERATORS LIKE RELIANCE, VODAFONE, AIRTEL, AIRCEL, TATA, IDEA AND MANY MORE.

THINGS YOU DIDN'T KNOW ABOUT POLYCAB

BETWEEN ITS FACILITIES IN DAMAN, HALOL (VADODARA), NASHIK AND ROORKEE THE COMPANY HAS 3.5 MILLION SQUARE FEET OF MANUFACTURING SPACE.

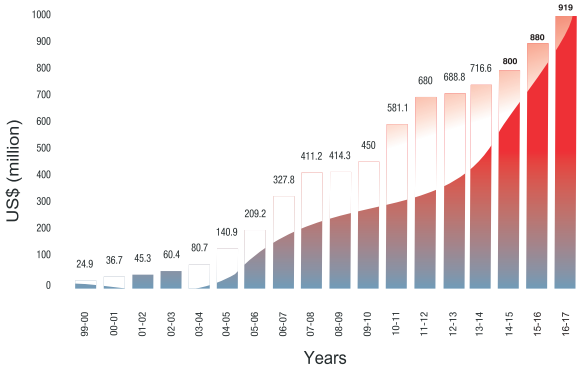
POLYCAB MANUFACTURES ENOUGH CABLE EACH YEAR TO CIRCUMNAVIGATE THE EARTH THREE AND A HALF TIMES AND ENOUGH WIRE TO GO TO THE MOON AND COME BACK - FOUR TIMES.

POLYCAB HAS INCREASED ITS TURNOVER 100 TIMES IN SIXTEEN YEARS.

OVER 300 AUTHORISED DISTRIBUTORS SERVICE ITS INDIA NEEDS AND ITS OVERSEAS INTERESTS.

POLYCAB OFFERS A VARIETY OF SERVICES:

- COMMERCIALLY REASONABLE PRICES
- RELIABLE & CONSISTENT QUALITY
- PRODUCT DEVELOPMENT AS PER MARKET
- A TARGET STOCKING POLICY
- TECHNICAL SUPPORT FOR APPLICATION



CHAIRMAN'S MESSAGE

The journey of over four decades would not have been as exciting and fulfilling without the unconditional support of all our customers & our sales partners, I would like to express our deep gratitude to you, as you have made Polycab one of the outstanding companies in our industry.

Despite our rapid growth and elevation to the leadership position in the industry, the simplicity in Polycab's flexibility and openness to new market trends and changing technology continue to be our driving force. The core values of, simplicity, team work, trust amongst people, customer focus and meeting commitments have given us a unique position and respectability among the Indian industry.

Gearing up for the future and to keep winning in tomorrow's world, we have a well recognized market presence with a strong product & portfolio, streamlined and efficient manufacturing capabilities to withstand the winds of change. But we will need to be even more proactive, agile and customer centric. We will need to anticipate the future and be ready with solutions, even before the customer asks for them.

There are many new challenges the cable industry is facing with new market opportunities and product developments. Automation in all sphere's of business processing is becoming very important and innovation in this segment is inevitable. Polycab is extending its product range in the segment to meet your growing needs and many new products for specific applications will be introduced soon.

Polycab's business model is evolving. We are enhancing our key internal operations to ensure a consistent and positive experience for our customers. Our business processes will begin and end with the customers. We have identified focus areas of growth over the next 5 years and beyond. Polycab aspires to be a RS.10000+ crore company within the next 4 years.

We take this opportunity to thank you and convey our gratitude for the unabated support and trust you have always reposed on Polycab and encouraged it to move ahead confidently. We are confident that this will keep us ahead in our constant endeavour to be your preferred brand.

We hope to improve each day to serve you better.

HAPPY CABLING!!!

INDER T. JAISINGHANI
Chairman & Managing Director

QUALITY & RELIABILITY

Our aim is to achieve the highest level of product quality, reliability and safety, but we also know that this must be achieved at the lowest practical cost.

QUALITY ASSURANCE AND QUALITY MANUFACTURING

Quality assurance is intrinsic to Polycab. We confirm to ISO 9001:2008 standards in our manufacturing processes and overall company operation. Our management system has been defined by experienced personnel who develop, implement and monitor quality assurance procedures. The same rigour is applied to the monitoring of materials and services provided by the venders so that these also meet our quality system standards.

QUALITY PEOPLE

No quality is possible without the right people to carry through on the program. Everyone, from administrative staff to expert engineers, are committed to constant improvement. This commitment is backed by intensive training and education within an environment of Trust, Respect, Participation and Recognition.

MISSION

To build a strong brand and maintain superior quality for customer satisfaction

VISION

"Our Vision is to improve the quality of life and bring greater happiness to our customers. We will do so through reliable, safe, sustainable and best in class products and services, while enhancing stake holder value continuously".

QUALITY POLICY

POLYCAB

QUALITY POLICY

We at Polycab, shall continually strive to provide best quality products on-time, at optimum cost with an objective of enhancing Customer Satisfaction.

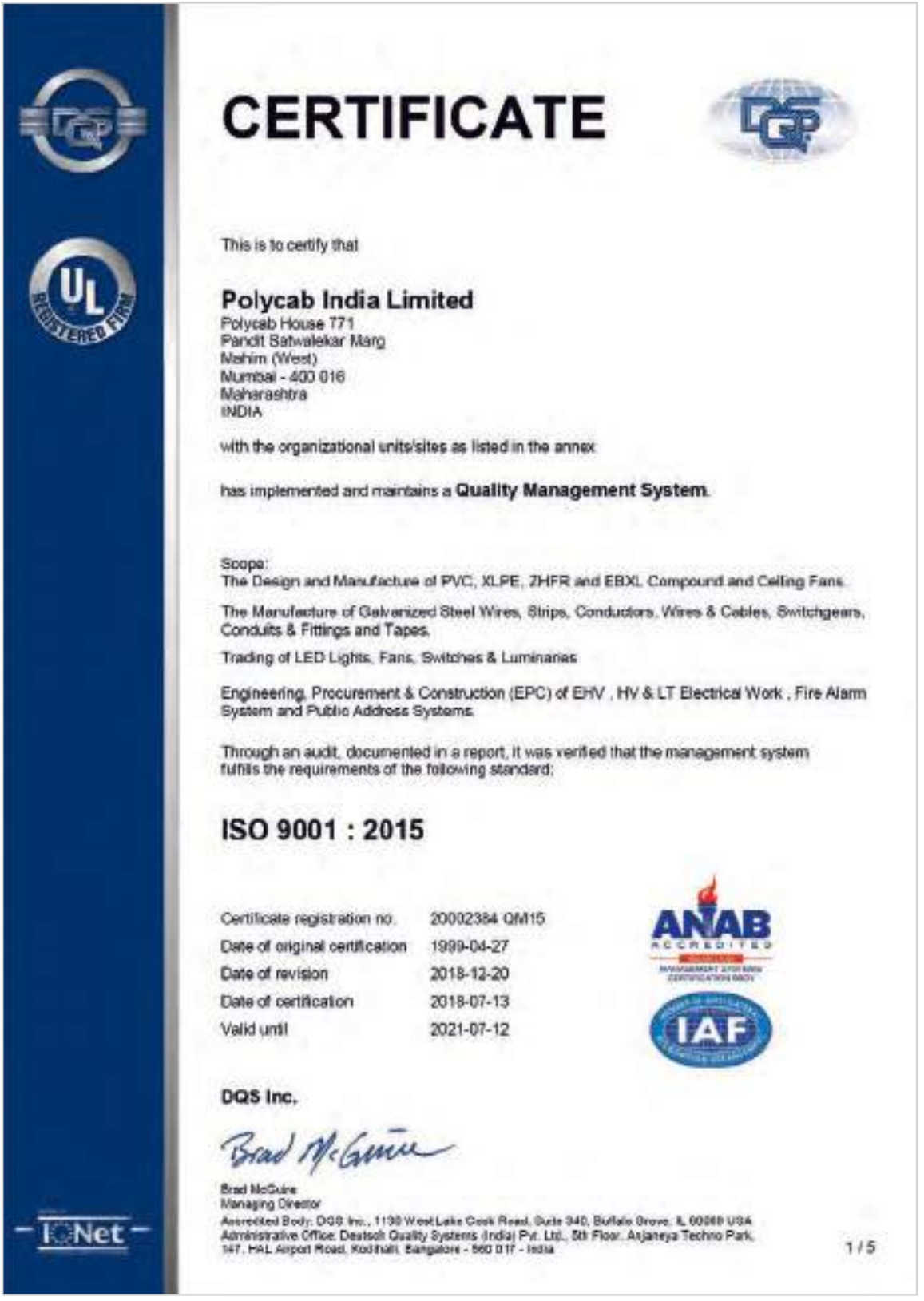
We shall achieve operational excellence by continually improving the skills of our associates, keeping their morale high and improving the effectiveness of established Quality Management System.

I. T. JAISINGHANI
Chairman & Managing Director

R. RAMAKRISHNAN
Vice Chairman, Joint MD
and Group CEO

Mumbai
12/04/2012

ISO 9001 : 2015



CERTIFICATE

This is to certify that

Polycab India Limited
Polycab House 771
Pandit Satwalekar Marg
Mahim (West)
Mumbai - 400 016
Maharashtra
INDIA

with the organizational units/sites as listed in the annex

has implemented and maintains a **Quality Management System**.

Scope:
The Design and Manufacture of PVC, XLPE, ZHFR and EBXL Compound and Ceiling Fans.

The Manufacture of Galvanized Steel Wires, Strips, Conductors, Wires & Cables, Switchgears, Conduits & Fittings and Tapes.

Trading of LED Lights, Fans, Switches & Luminaries

Engineering, Procurement & Construction (EPC) of EHV , HV & LT Electrical Work , Fire Alarm System and Public Address Systems.

Through an audit, documented in a report, it was verified that the management system fulfils the requirements of the following standard:

ISO 9001 : 2015

Certificate registration no.	20002384 QM15
Date of original certification	1999-04-27
Date of revision	2018-12-20
Date of certification	2018-07-13
Valid until	2021-07-12

DQS Inc.

Brad McGuire
Managing Director
Accredited Body: DQS Inc., 1130 West Lake Cook Road, Suite 340, Buffalo Grove, IL 60089 USA
Administrative Office: Deutsch Quality Systems (India) Pvt. Ltd., 5th Floor, Anjaneya Techno Park, 147, HAL Airport Road, Kodihalli, Bangalore - 560 017 - India

1 / 5

ISO 14001 : 2015

ENVIRONMENTAL MANAGEMENT SYSTEM

CERTIFICATE

This is to certify that

Polycab India Limited
Polycab House 771
Pandit Satwalekar Marg
Mahim (West)
Mumbai - 400 016
Maharashtra
INDIA

with the organizational units/sites as listed in the annex

has implemented and maintains an **Environmental Management System.**

Scope:
The Environmental activities and supporting processes associated with the Design and Manufacture of PVC and XLPE compound.

The Environmental activities and supporting processes associated with the Manufacture of Conductors, Wires and Cables.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

ISO 14001 : 2015

Certificate registration no.	20002384 UM
Date of original certification	2010-06-22
Date of revision	2018-12-20
Date of certification	2018-07-13
Valid until	2021-07-12

DQS Inc.

Brad McGuire
Managing Director

Accredited Body: DQS Inc., 1130 West Lake Cook Road, Suite 340, Buffalo Grove, IL 60089 USA
Administrative Office: Deutsch Quality Systems (India) Pvt. Ltd., 5th Floor, Anjaneya Techno Park, 147, HAL Airport Road, Kodihalli, Bangalore - 560 017 - India

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BS OHSAS 18001 : 2007

OCCUPATIONAL HEALTH AND SAFETY MANAGEMENT SYSTEM

CERTIFICATE

This is to certify that

Polycab India Limited
Polycab House 771
Pandit Satwalekar Marg
Mahim (West)
Mumbai - 400 016
Maharashtra
INDIA

with the organizational units/sites as listed in the annex

has implemented and maintains an
Occupational Health and Safety Management System

Scope:
The Occupaitonal Health & Safety activities and supporting processes associated with the Design and Manufacture of PVC and XLPE compound.

The Occupational Health & Safety activities and supporting processes associated with the manufacture of Conductors, Wires and Cables.

Through an audit, documented in a report, it was verified that the management system fulfills the requirements of the following standard:

BS OHSAS 18001 : 2007

Certificate registration no.	20002384 BSOH
Date of original certification	2010-06-22
Date of revision	2018-12-20
Date of certification	2018-07-13
Valid until	2021-03-12

DQS Inc.

Brad McGuire
Managing Director

Accredited Body: DQS Inc., 1130 West Lake Cook Road, Suite 340, Buffalo Grove, IL 60089 USA
Administrative Office: Deutsch Quality Systems (India) Pvt. Ltd., 5th Floor, Anjaneya Techno Park, 147, HAL Airport Road, Kodihalli, Bangalore - 560 017 - India

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CPRI TEST REPORT

CENTRAL POWER RESEARCH INSTITUTE

CPRI

TEST REPORT

Test Report Number : CDD-0031 **Dated** : 07.09.2016

Name & Address of the Customer : M/s Polycab Wires Pvt. Ltd.,(Unit 4),
Plot No. 67-72,Nurpura,
Tal:Halol, Dist. Panchmahal,- 389350, Gujarat.

Name & Address of the Manufacturer: M/s Polycab Wires Pvt. Ltd.,(Unit 4),
Plot No. 67-72,Nurpura,
Tal:Halol, Dist. Panchmahal,- 389350, Gujarat.

Particulars of sample tested : 1 X 400 mm^2, 19/33 kV XLPE Cable

Condition of the sample on receipt : New
Type : A2XA2Y- XLPE insulated HDPE Sheathed Cable
Designation : Conductor Material : Aluminium
No. of cores : One
Size : 400 mm^2
Insulation: XLPE (TR-XLPE as Declared)
Metallic Sheath : Corrugated Aluminium
Outer sheath : HDPE (ST7)
Voltage Rating : 19/33 kV(E)
Embossing : 2016 POLYCAB ELECTRIC
19/33KV(E) GRADE XLPE 1C X 400 SQ.MM A2XA2Y
" OPTCL-ODSSP"

Serial Number : Drum No: 29AFG-223788-2
Number of Samples tested : One
Date(s) of Test(s) : 29.07.2016 to 02.09.2016
CPRI Sample Code no(s) : DCCDCAB16S0144
Particulars of test conducted : Type Test as per IS 7098 Part II
Test in accordance with
Standard /Specification : In General Accordance with IS 7098 Part II- 2011, Am1-2015,
Sampling plan : Not Applicable
Customer's requirement : Nil
Deviation if any : Nil
Name of the witnessing persons
Customer's representatives : Nil
Other than customer's representatives : None
Test subcontracted with address of the laboratory : Nil

Documents constituting this Report (in words)
Number of sheets : Eight
Number of oscillogram/s : Four (One Page)
Number of graphs : Nil
Number of photos : Nil
Number of test circuit diagrams : Nil
Number of drawings : Nil

(Thirumurthy)
Test Engineer

(Dr.B.Nageshwar Rao)
Additional Director

Sheet 1 of 8

BASEC PCR

BASEC

CERTIFICATION SCHEDULE

Polycab India Limited

SCOPE OF CERTIFICATION

BASEC

CERTIFICATE OF CONFORMITY

Polycab India Limited

Has implemented and maintains a
Product Management System
that fulfils the requirements of the following

BASEC Product Certification Requirements

BASEC

CERTIFICATION SCHEDULE

Polycab India Limited

SCOPE OF CERTIFICATION

Low Voltage Power and Control Cables up to and including 1 kV

BASEC PCR


BASEC

Product Certification Schedule

PERMISSIBLE MARKS

BASEC

YELLOW ACETATE THREAD


BASEC

Product Certification Schedule

PERMISSIBLE MARKS

BASEC

YELLOW ACETATE THREAD


BASEC

Product Certification Schedule

PERMISSIBLE MARKS

BASEC

YELLOW ACETATE THREAD


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Product Certification Schedule

PERMISSIBLE MARKS

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BASEC PCR


BASEC

Product Certification Schedule

BASEC

YELLOW ACETATE THREAD


BASEC

Product Certification Schedule

BASEC

YELLOW ACETATE THREAD


BASEC

Table of Product Certificate Schedules

Polycab India Limited
74/5-11 Daman Industrial Estate
Village Kadaiya
Daman-396210
UT
India


BASEC

Product Certification Licence

Polycab India Limited
74/5-11 Daman Industrial Estate
Village Kadaiya
Daman-396210
UT
India

CE CERTIFICATE

FIRST QUALITY CERTIFICATION

FQC®
FIRST QUALITY CERTIFICATION

CERTIFICATE

This certificate is granted to the organization, MANUFACTURER

POLYCAB WIRES PVT. LTD

H.O : Polycab House, 771, Pandit Satwalekar Marg, Mahim (W), Mumbai – 400 016, India.
Works: 74/8-11, Daman Industrial Area, Village Kadaiya, Daman – 396210, UT
Survey No. 67-69, 71-72, 105, 106, Nurpura, District Panchmahal, Halol - 389 350, Gujarat, INDIA

Products Description:

1. HO5v – U/R/K/F
2. HO7v – U/R/K/F
3. HO5z – U/R/K
4. HO7z – U/K
5. HO5vv – U/R/K/F
6. HO7vv – U/R/K/F
7. Panel Board Wiring Cables
8. L V Power & Control Cables
9. MV & HV Power Cables
10. Flame Retardant / Fire Resistant Cables
11. Instrumentation & Signaling Cables
12. Co- Axial, LAN & Communication Cables
13. Optical Fibre Cable (1 Fibre to 432 Fibre)

products described above complies with the essential health and safety requirements of Council Directive low voltage directive 2014/35/EU on the approximation of the laws of the Member States relating to the safety of products.

The following harmonized standards and/or technical specifications applied:

BS 5467:2016, BS 6724:2016, BS 6346:1997, BS 6622:2007, BS 7835:2007, BS 5054:2012, BS 6231:2006, BS 7211:2012, IEC 60502-1 2004+AMD1:2009, IEC 60502-2:2014, IEC 60331-21:1999, IEC 60331-11:1999+AMD1:2009, IEC 60332-1-1:2004+AMD1:2015, IEC 60332-3-22:2009+AMD1:2008, IS 7098 Part 1:1988, IS 7098 Part - 2:2011, IS 694:2010, IS 1554 - Part 1:1988, IS 1554 - Part 2:1988, BS EN 60794-1-1:2016, BS IEC 60794-1-22:2014, BS EN 60794-1-21:2015, BS EN 60794-1-22:2017, BS EN 60794-1-23:2012, BS EN 60794-1-24:2014, BS EN 60794-1-2:2017, BS EN 60793-2:2016, EN 60304-1-3, IEC 60794-1-2:2017 (For Optical Fiber Cable) & IEC 60793-1-1:2017 (For Optical Fiber)

Product complies with essential safety requirements objectives of mentioned directive/standard for Certification. An EC declaration is often referred to as a manufacturer's declaration.

Certificate No: 09.02.6204.1001
Date of Issue: (18.05.2017)09.02.2017
Expiry date : 08.02.2022

CE

First Quality Certification
Product Certificate Approved
Istanbul

This certificate remains the property of FQC. This must not be copied in whole or in part without the written permission of the managing Director of FQC. Deliberate misuse of the certificate or schedule will result in cancellation without notification. This document does not abrogate the compulsory obligation of manufacturer to issue the declaration of conformity/technical file. The product liability rests with the manufacturer or his representative.

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NABL - CERTIFICATE OF ACCREDITATION

National Accreditation Board for Testing and Calibration Laboratories
(A Constituent Board of Quality Council of India)

CERTIFICATE OF ACCREDITATION

POWER CABLE TEST LABORATORY, POLYCAB WIRES PVT. LTD.

has been assessed and accredited in accordance with the standard

ISO/IEC 17025:2005

"General Requirements for the Competence of Testing & Calibration Laboratories"

for its facilities at

Plot No. 67-69, 71-72, 105-106, Nurpura Road, Baska Halol, Dist. Panchmahal Halol, Gujarat

in the field of

TESTING

Certificate Number	TC-5295		
Issue Date	17/03/2017	Valid Until	16/03/2019

This certificate remains valid for the Scope of Accreditation as specified in the annexure subject to continued satisfactory compliance to the above standard & the relevant requirements of NABL.

(To see the scope of accreditation of this laboratory, you may also visit NABL website www.nabl-india.org)

Signed for and on behalf of NABL

N. Venkateswaran
Program Director

Anil Relia
Chief Executive Officer

IPH BERLIN

Independent, accredited testing station · Member laboratory of STL and LOVAG

TYPE TEST REPORT

NO. 03661-16-0555

Polycab Wires Pvt. Ltd. (Unit iV) 66-72, Noorpura, Tal, Panchamahal HALOL 36935 INDIA	CLIENT
Polycab Wires Pvt. Ltd. Unit 4, Ploy No. 66-72, Narpura, Taluka - Halol, District - Panchamahal Gujarat □389 350 INDIA	MANUFACTURER
33 kV XLPE power cable	TEST OBJECT
3Cx 300 mm² CU/SC/XLPE/SC/CTS/PVC/SWA/PVC 33 kV	TYPE
Test sample	SERIAL NO.
Rated voltage U_0 19 kV U 33 kV Maximum value of the highest system voltage U_m 36 kV Rated cross-section of conductor 300 mm²	RATED CHARACTERISTICS GIVEN BY THE CLIENT
IEC 60502-2 Edition 3.0: 2014-02 "Power cables with extruded insulation and their accessories for rated voltages from 1 kV (U_m = 1.2 kV) up to 30 kV (U_m = 36 kV) – Part 2: Cables for rated voltages from 6 kV (U_m = 7.2 kV) up to 30 kV (U_m = 36 kV)"	NORMATIVE DOCUMENT
- Type tests, electrical - Type tests, non-electrical	RANGE OF TESTS PERFORMED
15 February up to 29 August 2016	DATE OF TEST
The test object meets the requirements defined in normative document specified above. The type tests have been PASSED.	TEST RESULT

H. ZINNBAUER
Head of Centre of Competence
High-Power/High-Voltage

D. JEGUST
Test engineer in charge

Berlin, 09 January 2017

Independent test laboratory accredited by the German Accreditation Body DAkkS, Deutsche Akkreditierungsstelle GmbH, in the fields of high-voltage switchgear and their components, cables and conductors as well as industrial low-voltage apparatus.
IPH Institut □Prüffeld für elektrische Hochleistungstechnik□ GmbH (IPH Berlin) is a subsidiary of CESI S.p.A, Milan.

DAkkS

MANUFACTURING PROCESS – AT POLYCAB

POLYCAB HV XLPE cables are manufactured at its most modern manufacturing setup in HALOL and DAMAN. Manufacture of HV XLPE CABLES requires great care and skill at all stages of processing. Work on HV cables has shown to raise the electric stress of XLPE cables it is essential that the extruded insulation is of high cleanliness without any imperfection, free of contamination, voids and manufacturing defects, and that the screen interface is smooth. In addition an integrated extrusion plant employing a Continuous Catenary Vulcanizing (CCV) process line (Dry Curing Line) is required. Polycab easily met these two criteria by carefully selecting imported insulating materials and by installing 6 CCV lines sourced from world renowned manufacturers. (Fig 1)

The cable core is triple extruded and crosslinked in the fully enclosed process in which the inner "semi-conducting" screen, the XLPE insulation and the outer semi conducting screen are applied simultaneously (Fig 2) to the pre-heated cable conductor. Specialized in-line inspection techniques using X-rays are employed to monitor the dimensional accuracy of the extruded core. These examinations confirm the correct levels of dimensional accuracy.

The final stage of HV cable manufacture is the high voltage test, which comprises an HV withstand, and a partial discharge detection test. These tests take place in Polycab's sophisticated HV Test Lab (Fig 3). The tests are of short duration, typically 30 minutes, and are capable of detecting the defects that initiate partial discharges, as small as one "pico-coulomb". Such defects lead to gradual deterioration of the XLPE and eventually breakdown may occur.

Figure 1 :
6 Nos. CCV (DRY CURE) LINES

Figure 2 :
Three Layer Comon Triple Extrusion Method

Figure 3 :
Ultra Modern Hv Testing Lab

FLOW CHART

Conductor

Quality Checks
No. of Wires, Size, Conductor Resistance, Surface Finish, Diameter of Conductor

Continuous Triple Extrusion
Inner Semicon, XLPE Insulation Outer Semicon

Quality Checks
Type of Compounds, Batch No. details, Thickness, Core Dia, Electricity, Surface Finish, Hot Set Test

Copper Taping

Quality Checks
Size & Type of Tape, Market /Lot No., Overlap, Dia over tape, Continuity, Tape Jointing, Core Identification

Laying –Up / Twisting

Quality Checks
Core Sequence, No of Cores, Laylength., Binder /Roundness

Inner Sheathing (Extrusion*)

Quality Checks
Type of PVC, Batch/Lot No., Thickness of Sheath, Dia over Sheath

Armouring

Quality Checks
Armour Dimensions, No. of Armour, Coverage, Armour Joint

Outer Sheathing

Quality Checks
Type of PVC, Batch/Lot No., Thickness of Sheath, Dia over Sheath, Color, Surface Finish

Final Testing

Quality Checks
Conductor Resistance, High Voltage Test, Partial Discharge Test

Packing / Marking

Quality Checks
Marking Details, Lagging Coverage

Storage / Dispatch

Cables with FR-LSH / Zero Halogen Outer Sheath can be supplied against specific requirement.

POLYCAB GUIDELINES FOR SELECTION OF CABLES

Power Cables are generally selected considering the application. However, following factors are important for selection of suitable cable construction required to transport electrical energy from one end to the other.

1) Maximum operating voltage grade
2) Maximum fault current and its duration under fault condition
3) Load to be carried.
4) Possible overloading duration & magnitude.
5) Route length and voltage drop.
6) Mode of installation considering installation environment such as ambient & ground temperature chemical & physical properties of soil.
7) Requirement of fire performance in cable

All sizes of POLYCAB XLPE cables are designed to standard operating conditions in India and abroad. The standards adopted are considering the geographical/climatical conditions and general applications of power for utilities, distribution and
generation purposes.

The cables are manufactured conforming to Indian & International cables specifications for XLPE Insulated cables. Customer specific requirements can also be met.

Polycab is manufacturing wide range of cables, so it is important that while placing enquiries or orders, as much information as possible shall be given to Polycab, so that the enquiries and orders are dealt quickly and efficiently.

1) Voltage Grade :- 3.6 / 6 (7.2)kV **OR** 3.8 / 6.6 (7.2)kV, 6 / 10 (12)kV **OR** 6.35 / 11 (12)kV,

8.7 / 15 (17.5)kV **OR** 8.7 / 15 (17.5)kV, 12 / 20 (24)kV **OR** 12.7 / 22 (24)kV, 18 / 30 (36)kV **OR** 19 / 33 (36)kV

2) International standard :- Year or International standard – IEC-60502 (Part-2), BS-6622 & BS:7835.

3) Number of cores. :- Single & Three.

4) Conductor :- Size - 35 Sq.mm to 1000 Sq.mm in Single Core Cables & 35 Sq.mm to 630 Sq.mm in

3 Core cables.

5) Conductor Material :- Copper / Aluminum

6) Type of Insulation :- XLPE

7) Type of Inner Sheathing :- PVC Extruded / PVC / Flame Retardant / Flame Retardant Low Smoke / Zero Halogen (LSOH).

8) Type of Armour :- Unarmoured / Strip Armoured / Round Wire Armored / Tape Armored.

9) Type of Outer Sheath :- PVC / Flame Retardant / Flame Retardant Low Smoke / Zero Halogen (LSOH).

10) Length of cable required and drum length.

DESIGN OF HT CABLES AND CONSTRUCTIONS WITH SPECIAL FEATURES

1. Conductor

Stranded compacted class 2 circular conductors of Annealed Copper/ Aluminium to carry continuous load and short circuit current. All Conductors shall comply with the requirement of IEC 60228/ BS 6360.

2. Conductor Screen

This is a layer of cross linkable semiconducting compound extruded directly over the conductor. It not only eliminates any sharp points on conductor surface but also nullifies the chance of electric discharge at the interface between conductor & insulation.

3. Insulation

The insulation is of natural, Cross Linked Polyethylene (XLPE) extruded over conductor screen. XLPE Insulation is capable of operation continuously at 90°C. Thickness of insulation shall as per IEC:60502 Part – 2, BS:6622, BS:7835.

4. Non-Metallic Insulation Screen

This is a layer of cross linkable semiconducting compound extruded directly over the Insulation at the same time when conductor screen and insulation are extruded. These are extruded in one operation by TRIPLE EXTRUSION which eliminates the formation of micro voids during the extrusion and curing resulting in longer life of cables.

5. Metallic Insulation Screen

The metallic Screen can be helically applied copper tape or a number of copper wires applied over semiconducting screen to carry fault current. This ensures that the surface of insulation is at ground potential and hence no surface discharge and electric field will be radial in nature.

6. Laying up

In case of three core cable, insulated cores are laid up together with PVC* or Polypropylene Fiber fillers to maintain circularity of cable. The core identification of three core cable is done either by coloured strips / numbered applied on the cores.

7. Inner Sheath

Polyvinyl Chloride (PVC) or Polyethylene (PE) compound is extruded over the laid up cores. The laid up cores shall be provided with inner sheath applied either by extrusion or by wrapping as per customer requirement. It shall be ensured that the shape is as circular as possible.

8. Armour

Galvanized steel wires applied over the inner sheath in case of three core cables and for single core cables, non-magnetic armouring is applied over the inner sheath. The direction of lay of armouring shall be left hand. The purpose of armour is to give mechanical protection to cables. It also acts as a return path for earth fault current.

9. Outer Sheath

This is an extruded layer of polyvinyl chloride (PVC) or Polyethylene (PE) is extruded over armour. For single core unarmoured cables the outer sheath is extruded over the non-magnetic metallic part of insulation screen.

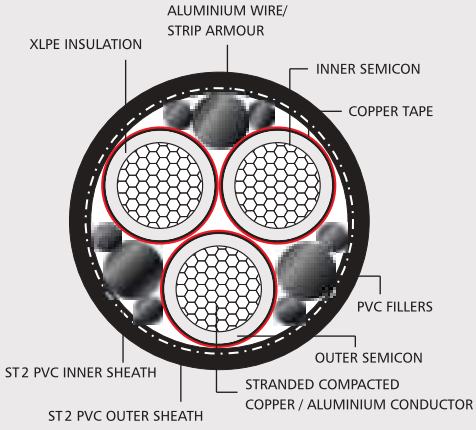
* Weights given in the table are with PVC fillers.

SPECIAL FEATURES

Other than above design, elements can vary in a number of ways to meet the specific customer requirements. Some of the examples are listed below.

- Longitudinal and radial water blocking of conductor, cable cores and complete cable.
- Lead alloy metallic sheath.
- Water tree retardant XLPE insulation.

Polycab manufactures following voltage grade cables as per IEC-60502 part-2 and BS-6622 & BS:7835

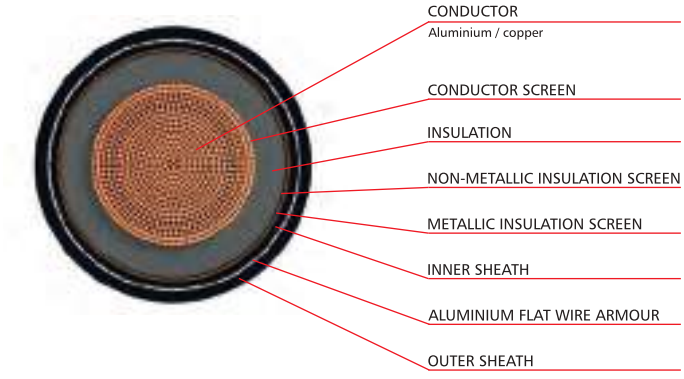


- 3.6 / 6 (7.2)kV **OR** 3.8 / 6.6 (7.2)kV
- 6 / 10 (12)kV **OR** 6.35 / 11 (12)kV
- 8.7 / 15 (17.5)kV **OR** 8.7 / 15 (17.5)kV
- 12 / 20 (24)kV **OR** 12.7 / 22 (24)kV
- 18 / 30 (36)kV **OR** 19 / 33 (36)kV

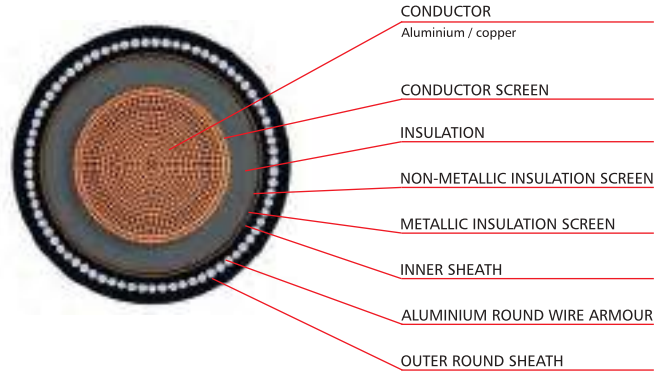
SIZES:

- 35 Sq.mm up to 1000 Sq.mm in Single Core Cables.
- 35 Sq.mm to 630 Sq.mm in Multi Cores Cables.

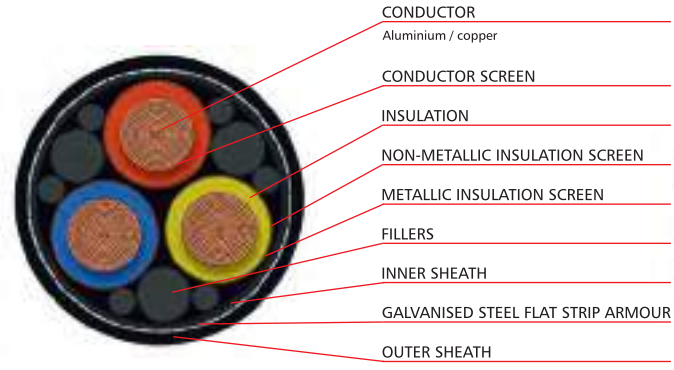
SINGLE CORE CABLE WITH FLAT STRIP ARMOUR



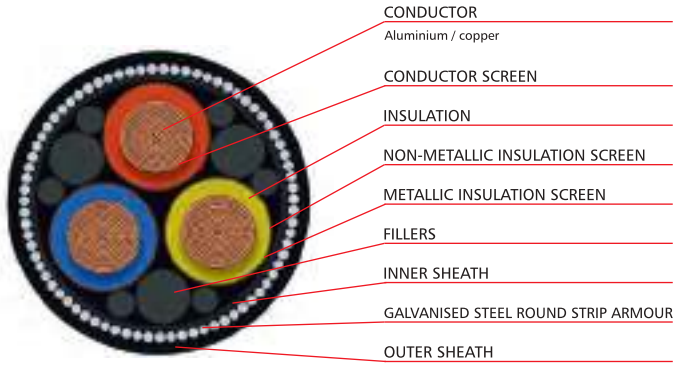
SINGLE CORE CABLE WITH ROUND STRIP ARMOUR



THREE CORE CABLE WITH FLAT STRIP ARMOUR



THREE CORE CABLE WITH ROUND STRIP ARMOUR



QUALITY ASSURANCE

Polycab's goal is to have satisfied customers. Quality assurance consisting of rigorous inspection followed by meticulous process and quality control in all phases, guarantees the superior quality of Polycab's products. Up-to-date laboratory facilities ensure that quality control requirements are met in full. Polycab XLPE Cables are tested to ensure high reliability in performance. Continuous process monitoring and post manufacturing tests ensure the compliance to Indian and International Standards. The assurance of quality is further ensured by ISI certification on cables and ISO 9001 certification by UL, USA, A-7913.

QUALITY ASSURANCE TESTING

Polycab is self sufficient to carry out all Routine & Type Tests in its own laboratory. It has world class Testing facilities for Routine & Type Tests. Routine Tests IEC:60502, BS:6622, BS:7835

- Partial Discharge Test
- High Voltage Test
- Conductor Resistance Test. Routine Tests are performed on each manufactured length of cable in Routine Test Laboratory.

TYPE TEST

IEC:60502, BS:6622, BS:7835

a) Electrical Type Tests
b) Non-Electrical Type Tests
c) Special Tests.

The cable samples are type tested in-house to ensure conformance as to various standards. Polycab cables of various voltage grades are type tested at CPRI Bangalore & ERDA Vadodara. Short circuit tests on cable conductor and armour are successfully carried at CPRI Bhopal & ERDA Vadodara.

Impulse Test Set Up

Non Electrical Type Test Laboratory

FLAME RETARDANT LOW SMOKE CABLES

The behaviour of Electric Cables in presence of fire has been a matter of great concern to all Electrical Engineers involved in Generation, Transmission and Utilisation of electric power. Normally all XLPE Cables have an outer sheath of PVC. Although PVC by itself is flame retarding, it does produce highly toxic and corrosive fumes in the event of fire.

As a matter of fact, in closed and crowded places such as power stations, subways, railways with long sections in tunnels, road tunnels, ships, hospitals, schools, hotels, cinema theatres, museums and public premises in general, besides the obvious danger represented by fire propagation, also fume toxicity and opacity are particularly important as they may cause, with equally serious consequences for human safety, suffocation intoxication and panic due to reduced visibility.

FR-LSH PVC compound should ensure the following :

1) Minimum smoke emission.
2) Very low toxic and corrosive fumes emission.
3) Fire Retardant characteristics.

Our laboratory is well equipped with latest test equipments to carry out following test requirements.

a) The oxygen index and temperature index of sheath as per ASTM-D 2863.

b) Flammability characteristics of cable as per IEC 60332 (Pt. I) & IEC 60332 (Pt. III)

c) Determination of the amount of halogen acid gas evolved during combustion of outersheath materials as per per IEC 60754 (Pt. I & II).

d) Determination of smoke generation of outersheath material under fire as per applicable BS Standards and IEC : 61034(Part-2)

e) The measurement of smoke density as per ASTM D2843

CONDUCTOR RESISTANCE

The details to the above Guidelines are given in tables.

TABLE - 1 *Conductor Technical Information for Single Core and Multicore cables conforming to IEC 60228 Latest (Stranded-Class-2) Copper & Aluminium Conductors

Nominal size of conductor (sq.mm)	Minimum No. of Wires in the conductor		Maximum D.C. Resistance at 20° C		Maximum A.C Resistance at 90° C	
	Circular Compacted or Shaped Conductor		Plain Copper (ohm/Km)	Aluminium (ohm/Km)	Plain Copper (ohm/Km)	Aluminium (ohm/Km)
	Plain Copper	Aluminium				
25	6	6	0.7270	1.2000	0.927	1.54
35	6	6	0.5240	0.8680	0.668	1.11
50	6	6	0.3870	0.6410	0.494	0.822
70	12	12	0.2680	0.4430	0.342	0.568
95	15	15	0.1930	0.3200	0.247	0.411
120	18	15	0.1530	0.2530	0.196	0.325
150	18	15	0.1240	0.2060	0.159	0.265
185	30	30	0.0991	0.1640	0.128	0.211
240	34	30	0.0754	0.1250	0.0982	0.161
300	34	30	0.0601	0.100	0.0792	0.130
400	53	53	0.0470	0.0778	0.0632	0.102
500	53	53	0.0366	0.0605	0.0509	0.0801
630	53	53	0.0283	0.0469	0.0414	0.0634
800	53	53	0.0221	0.0367	0.0349	0.0513
1000	53	53	0.0176	0.0291	0.0306	0.0426

* Conductor meeting requirements of IEC-60228 and BS 6360 can also be manufactured.

TABLE - 2 Short Circuit Rating for 1 Second Duration for Copper and Aluminium XLPE Cables (Current In K. AMPS)

Short Circuit Current rating in KA/Sec		
Nominal size of conductor (sq.mm)	XLPE Insulated	
	Copper	Aluminium
25	3.58	2.35
35	5.01	3.29
50	7.15	4.70
70	10.01	6.58
95	13.59	8.93
120	17.16	11.28
150	21.45	14.10
185	26.46	17.39
240	34.32	22.56
300	42.90	28.20
400	57.20	37.60
500	71.50	47.00
630	90.09	59.22
800	114.40	75.20
1000	143.00	94.00

MEDIUM VOLTAGE CABLE (MULTI -CORE)

Voltage Grade (kv)	Nominal Cross Section (min^2)	Nominal Thickness of Insulation (mm)	Nominal Dia of Steel Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
3.6/6 (7.2)	3 x 50	2.5	2.5	2.5	45.0	4040
	3 x 70	2.5	2.5	2.6	49.0	4930
	3 x 95	2.5	2.5	2.7	52.0	5890
	3 x 120	2.5	2.5	2.8	56.0	6900
	3 x 150	2.5	2.5	2.9	59.0	7890
	3 x 185	2.5	2.5	3.0	64.0	9320
	3 x 240	2.6	2.5	3.2	70.0	11380
	3 x 300	2.8	3.15	3.5	77.0	14440
	3 x 400	3.0	3.15	3.8	86.0	17790
	3 x 500	3.2	3.15	4.0	94.0	21920
	3 x 630	3.2	3.15	4.2	103.0	26950
6/10 (12)	3 x 50	3.4	2.5	2.6	50.0	4480
	3 x 70	3.4	2.5	2.7	53.0	5370
	3 x 95	3.4	2.5	2.9	57.0	6390
	3 x 120	3.4	2.5	3.0	61.0	7420
	3 x 150	3.4	2.5	3.1	64.0	8440
	3 x 185	3.4	2.5	3.2	68.0	9890
	3 x 240	3.4	3.15	3.4	75.0	12750
	3 x 300	3.4	3.15	3.6	80.0	14890
	3 x 400	3.4	3.15	3.8	88.0	18110
	3 x 500	3.4	3.15	4.0	95.0	22090
	3 x 630	3.4	3.15	4.3	104.0	27180
8.7/15 (17.5)	3 x 50	4.5	2.5	2.8	55.0	5110
	3 x 70	4.5	2.5	2.9	58.0	5980
	3 x 95	4.5	2.5	3.0	62.0	7010
	3 x 120	4.5	2.5	3.1	66.0	8060
	3 x 150	4.5	2.5	3.2	69.0	9110
	3 x 185	4.5	3.15	3.4	75.0	11420
	3 x 240	4.5	3.15	3.6	80.0	13570
	3 x 300	4.5	3.15	3.7	85.0	15720
	3 x 400	4.5	3.15	4.0	93.0	19040
	3 x 500	4.5	3.15	4.2	100.0	23050
	3 x 630	4.5	3.15	4.4	109.0	28150
12/20 (24)	3 x 50	5.5	2.5	2.9	60.0	5630
	3 x 70	5.5	2.5	3.1	63.0	6600
	3 x 95	5.5	2.5	3.2	67.0	7650
	3 x 120	5.5	3.15	3.3	72.0	9430
	3 x 150	5.5	3.15	3.4	75.0	10590
	3 x 185	5.5	3.15	3.6	80.0	12130
	3 x 240	5.5	3.15	3.7	85.0	14290
	3 x 300	5.5	3.15	3.9	90.0	16530
	3 x 400	5.5	3.15	4.1	98.0	19910
	3 x 500	5.5	3.15	4.3	105.0	23950
	3 x 630	5.5	3.15	4.6	114.0	29150
18/30 (36)	3 x 50	8.0	3.15	3.4	73.0	7980
	3 x 70	8.0	3.15	3.5	77.0	9020
	3 x 95	8.0	3.15	3.6	80.0	10130
	3 x 120	8.0	3.15	3.7	84.0	11310
	3 x 150	8.0	3.15	3.8	87.0	12490
	3 x 185	8.0	3.15	4.0	92.0	14180
	3 x 240	8.0	3.15	4.1	97.0	16420
	3 x 300	8.0	3.15	4.3	102.0	18720
	3 x 400	8.0	3.15	4.5	110.0	22190
	3 x 500	8.0	3.15	4.7	117.0	26350
	3 x 630	8.0	3.15	5.0	126.0	31700

Standard: IEC 60502 & BS 6622 (Wherever applicable)

Conductor: Circular Stranded Compact Copper Conductor

Conductor Screen: Extruded Layer of semi Conducting Material

Insulation : XLPE

Insulation Screen: Extruded Layer of Stripable / Bonded Semi-conducting Material

Metallic Screen: Copper Tape

Bedding: Extruded PVC over non-hygroscopic filler.

Armouring: Single Layer of galvanised Steel Wire, however steel tape & Flat wire armour can be offered

Sheathing: Extruded PVC

Operating Temperature: 90°C for continuous operation and 250 C for short circuit conditions.

Note :

1) Cables are also available with Aluminium conductors, Copper wire Screen and LSF Outersheath.
2) Cables can be offered with BS & VDE Specification.

MEDIUM VOLTAGE CABLE (1CORE)

Voltage Grade (kv)	Nominal Cross Section (mm^2)	Nominal Thickness of Insulation (mm)	Nominal Dia. of Aluminium Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
3.6/6 (7.2)	1 x 50	2.5	1.6	1.8	24.0	960
	1 x 70	2.5	1.6	1.8	26.0	1190
	1 x 95	2.5	1.6	1.9	27.0	1480
	1 x 120	2.5	1.6	1.9	29.0	1750
	1 x 150	2.5	1.6	2.0	30.0	2040
	1 x 185	2.5	2.0	2.0	33.0	2500
	1 x 240	2.6	2.0	2.1	36.0	3110
	1 x 300	2.8	2.0	2.2	38.0	3760
	1 x 400	3.0	2.0	2.3	42.0	4660
	1 X 500	3.2	2.5	2.5	47.0	6000
	1 X 600	3.2	2.5	2.6	51.0	7500
	1 X 800	3.2	2.5	2.7	55.0	9270
	1 X 1000	3.2	2.5	2.9	60.0	11390

Voltage Grade (kv)	Nominal Cross Section (mm^2)	Nominal Thickness of Insulation (mm)	Nominal Dia. of Aluminium Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
6/10 (12)	1 x 50	3.4	1.6	1.8	26.0	1040
	1 x 70	3.4	1.6	1.9	28.0	1290
	1 x 95	3.4	1.6	1.9	29.0	1570
	1 x 120	3.4	1.6	2.0	31.0	1850
	1 x 150	3.4	2.0	2.1	33.0	2230
	1 x 185	3.4	2.0	2.1	35.0	2620
	1 x 240	3.4	2.0	2.2	37.0	3220
	1 x 300	3.4	2.0	2.2	39.0	3840
	1 x 400	3.4	2.0	2.4	43.0	4730
	1 X 500	3.4	2.5	2.5	47.0	6030
	1 X 600	3.4	2.5	2.6	52.0	7550
	1 X 800	3.4	2.5	2.7	56.0	9300
	1 X 1000	3.4	2.5	2.9	60.0	11430

Voltage Grade (kv)	Nominal Cross Section (mm^2)	Nominal Thickness of Insulation (mm)	Nominal Dia. of Aluminium Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
8.7/15 (17.5)	1 x 50	4.5	1.6	1.9	28.0	1160
	1 x 70	4.5	1.6	1.9	30.0	1400
	1 x 95	4.5	2.0	2.0	32.0	1770
	1 x 120	4.5	2.0	2.1	34.0	2070
	1 x 150	4.5	2.0	2.1	35.0	2360
	1 x 185	4.5	2.0	2.2	37.0	2780
	1 x 240	4.5	2.0	2.3	40.0	3390
	1 x 300	4.5	2.0	2.3	42.0	4010
	1 x 400	4.5	2.5	2.5	47.0	5080
	1 X 500	4.5	2.5	2.6	50.0	6230
	1 X 600	4.5	2.5	2.7	54.0	7770
	1 X 800	4.5	2.5	2.8	58.0	9580
	1 X 1000	4.5	2.5	3.0	63.0	11720

MEDIUM VOLTAGE CABLE (1CORE)

Voltage Grade (kv)	Nominal Cross Section (min²)	Nominal Thickness of Insulation (mm)	Nominal Dia of Steel Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
12/20 (24)	1 x 50	5.5	1.6	2.0	30.0	1280
	1 x 70	5.5	2.0	2.0	33.0	1590
	1 x 95	5.5	2.0	2.1	34.0	1900
	1 x 120	5.5	2.0	2.1	36.0	2190
	1 x 150	5.5	2.0	2.2	37.0	2510
	1 x 185	5.5	2.0	2.2	39.0	2920
	1 x 240	5.5	2.0	2.3	42.0	3540
	1 x 300	5.5	2.5	2.4	45.0	4320
	1 x 400	5.5	2.5	2.5	49.0	5250
	1 x 500	5.5	2.5	2.6	52.0	6440
	1 x 630	5.5	2.5	2.8	56.0	7980
	1 x 800	5.5	2.5	2.9	60.0	9800
	1 x 1000	5.5	2.5	3.0	65.0	11940

Standard: IEC 60502 & BS 6622 / BS 7835 (Wherever applicable)

Conductor: Circular Stranded Compact Copper Conductor

Conductor Screen: Extruded Layer of semi Conducting Material

Insulation: XLPE

Insulation Screen: Extruded Layer of Stripable Semi-conducting Material

Metallic Screen: Copper Tape

Bedding: Extruded PVC over non-hygroscopic filler

Armouring: Single Layer of Aluminium Steel Wire, however Aluminum tape & Flat Aluminium armour can be offered

Sheathing: Extruded PVC

Operating Temperature: 90 C For continuous operation and 250 C for short circuit conditions

Voltage Grade (kv)	Nominal Cross Section (min²)	Nominal Thickness of Insulation (mm)	Nominal Dia of Steel Wire Armour (mm)	Nominal Thickness of Over Sheath (mm)	Approx Overall Dia (mm)	Approx. Weight (Kg/Km)
18/30 (36)	1 x 50	8.0	2.0	2.2	36.0	1680
	1 x 70	8.0	2.0	2.2	38.0	1950
	1 x 95	8.0	2.0	2.3	40.0	2270
	1 x 120	8.0	2.0	2.3	41.0	2570
	1 x 150	8.0	2.5	2.4	44.0	3040
	1 x 185	8.0	2.5	2.5	46.0	3490
	1 x 240	8.0	2.5	2.5	48.0	4110
	1 x 300	8.0	2.5	2.6	51.0	4820
	1 x 400	8.0	2.5	2.7	54.0	5750
	1 x 500	8.0	2.5	2.8	57.0	6970
	1 x 630	8.0	2.5	2.9	62.0	8530
	1 x 800	8.0	2.5	3.1	66.0	10420
	1 x 1000	8.0	2.5	3.2	71.0	12590

TABLE 7 CURRENT RATINGS FOR SINGLE-CORE CABLES WITH XLPE INSULATION-RATED VOLTAGE 3.6/6 kV TO 18/30 kV COPPER CONDUCTOR

Nominal Area of Conductor (mm²)	Buried Direct in the Ground		In a Buried Duct		In Air		
	Trefoil (A)	Flat Spaced (A)	Trefoil Ducts (A)	Flat Touching Ducts (A)	Trefoil (A)	Flat Touching Ducts (A)	Flat Spaced
16	109	113	103	104	125	128	150
25	140	144	132	133	163	167	196
35	166	172	157	159	198	203	238
50	196	203	186	188	238	243	286
70	239	246	227	229	296	303	356
95	285	293	271	274	361	369	434
120	323	332	308	311	417	426	500
150	361	366	343	347	473	481	559
185	406	410	387	391	543	550	637
240	469	470	447	453	641	647	745
300	526	524	504	510	735	739	846
400	590	572	564	571	845	837	938

Maximum Conductor Temperature	:	90 °C
Ambient Air Temperature	:	30 °C
Ground Temperature	:	20 °C
Depth of Laying	:	0.8 m
Thermal Resistivity of Soil	:	1.5 K.m/W
Thermal Resistivity of Earthenware Ducts	:	1.2 K.m/W

TABLE 8 CURRENT RATINGS FOR SINGLE-CORE CABLES WITH XLPE INSULATION-RATED VOLTAGE 3.6/6 kV TO 18/30 kV ALUMINIUM CONDUCTOR

Nominal Area of Conductor (mm^2)	Buried Direct in the Ground		In a Buried Duct		In Air		
	Trefoil (A)	Flat Spaced (A)	Trefoil Ducts (A)	Flat Touching Ducts (A)	Trefoil (A)	Flat Touching Ducts (A)	Flat Spaced
16	84	88	80	81	97	99	116
25	108	112	102	103	127	130	153
35	129	134	122	123	154	157	185
50	152	157	144	146	184	189	222
70	186	192	176	178	230	236	278
95	221	229	210	213	280	287	338
120	252	260	240	242	324	332	391
150	281	288	267	271	368	376	440
185	317	324	303	307	424	432	504
240	367	373	351	356	502	511	593
300	414	419	397	402	577	586	677
400	470	466	451	457	673	676	769

Maximum Conductor Temperature : 90 °C
Ambient Air Aemperature : 30 °C
Ground Temperature : 20 °C
Depth of Laying : 0.8 m
Thermal Resistivity of Soil : 1.5 K.m/W
Thermal Resistivity of Earthenware Ducts : 1.2 K.m/W

TABLE 9 CURRENT RATINGS FOR THREE-CORE CABLES WITH XLPE CABLE-RATED VOLTAGE 3,6/6 kV TO 18/30kV - COPPER CONDUCTOR, ARMOURED AND UNARMOURED

Nominal Area of Conductor (mm^2)	Buried direct in the Ground		In a Buried Duct		In air	
	Buried Direct in Ground (A)	In a Buried Duct (A)	In Air (A)	Buried Direct in Ground (A)	In a Buried Duct I (A)	Flat Touching Flat Spaced (A)
16	101	87	109	101	88	110
25	129	112	142	129	112	143
35	153	133	170	154	134	172
50	181	158	204	181	158	205
70	221	193	253	220	194	253
95	262	231	304	263	232	307
120	298	264	351	298	264	352
150	334	297	398	332	296	397
185	377	336	455	374	335	453
240	434	390	531	431	387	529
300	489	441	606	482	435	599
400	553	501	696	541	492	683

Maximum Conductor Temperature : 90 °C
Ambient Air Temperature : 30 °C
Ground Temperature : 20 °C
Depth of laying : 0.8 m
Thermal Resistivity of Soil : 1.5 K.m/W
Thermal Resistivity of Earthenware Ducts : 1.2 K.m/W

TABLE 10 CURRENT RATING FOR THREE-CORE CABLES WITH XLPE INSULATED CABLE-RATED VOLTAGE 3,6/6 kV TO 18/30 kV-ALUMINIUM CONDUCTOR, ARMOURED AND UNARMOURED

Nominal Area of Conductor (mm^2)	Buried Direct in the Ground		In a Buried Duct		In Air	
	Buried Direct in Ground (A)	In a Buried Duct (A)	In Air (A)	Buried Direct in Ground (A)	In a Buried Duct I (A)	Flat Touching Flat Spaced (A)
16	78	67	84	78	68	85
25	100	87	110	100	87	111
35	119	103	132	119	104	133
50	140	122	158	140	123	159
70	171	150	196	171	150	196
95	203	179	236	204	180	238
120	232	205	273	232	206	274
150	260	231	309	259	231	309
185	294	262	355	293	262	354
240	340	305	415	338	304	415
300	384	346	475	380	343	472
400	438	398	552	432	393	545

Maximum Conductor Temperature : 90 °C
Ambient Air Temperature : 30 °C
Ground Temperature : 20 °C
Depth of Laying : 0.8 m
Thermal Resistivity of Soil : 1.5 K.m/W
Thermal Resistivity of Earthenware Ducts : 1.2 K.m/W

TABLE 11 CORRECTION FACTORS FOR AMBIENT AIR AEMPERATURE OTHER THAN 30°C

Maximum Conductor Temperature (°C)	Ambient Air Temperature (°C)							
	20	25	35	40	45	50	55	60
90	1.08	1.04	0.96	0.91	0.87	0.82	0.76	0.71

TABLE 12 CORRECTION FACTORS FOR AMBIENT GROUND TEMPERATURE OTHER THAN 20°C

Maximum Conductor Temperature (°C)	Ground Temperature (°C)							
	10	15	25	30	35	40	45	50
90	1.07	1.04	0.96	0.93	0.89	0.85	0.8	0.76

EHV CABLES

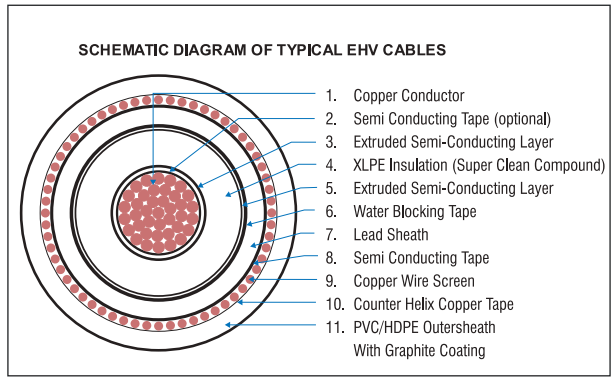
EHV cables can be used in a lot of industries like utilities, builders, government organizations, mining industries, state electricity boards, under ground railways and so on. Analysts say EHV under ground power transmission is the only solution for meeting today's growing power demand. This EHV cables will replace high voltage tower cables, which pose a risk of irreparable failure at any time and therefore will be in huge demand over the next decade.

The EHV cables can more or less survive all natural calamities and the installation can even withstand floods and earthquakes. This is huge contrast to the areas with overhead network, which are susceptible to strong flood and earthquake and have a possibility of pulling down the towers, which can be quite dangerous. EHV cables also have the following advantages as compared to others.

- More secured supply even during bad weather conditions
- Loss of transmission is lower
- Does not cause noise or air pollution
- Is underground and therefore saves space and is much better for urban transmission of electricity

Salient features of Polycab's EHV / XLPE line

- The only manufacturer in the country to have 6 CCV lines. These are sourced from reputed international manufacturer & technology providers
- Highly sophisticated extruders for conductor shield, insulation and insulation shield, employing a three layer single head triple extrusion method to eliminate contaminants in the insulating layers
- Microprocessor based equipment control all the parameters required for the process within the specified limits to maintain eccentrically
- Separate pressurised rooms for semicon shield & XLPE insulation compounds to avoid contamination and handling by vacuum loaders
- Air systems with air showers on doors to eliminate dust entry



Metallic Sheath

Metallic Sheath is must for cables above 33 kV as the cable of voltage grade 66 kV & above are working with dielectric stress of above 6 kV / mm & at this level of dielectric stress presence of water triggers tree formation in the insulation resulting in cable failure.

Water can enter the cable longitudinally as well as radially. Longitudinal water entry can be blocked by using water swellable tape on the core. Lead sheath and Corrugated Aluminium (Seam welded) sheath can block the entry in radial direction.

Lead sheath is extruded by continuous lead extruder which is equipped with micro-processor based temperature controllers & drives to achieve uniform thickness, better concentricity. Lead sheath in addition to other electrical & manufacturing advantages has a life span of minimum 40 to 45 years.

Aluminium shrips in the range of 1.6 to 4mm thickness are folded around the cable with a set up of rolls .The strips edges are trimmed to correct dimensions and welded longitudinally forming a tube. The welding is made with lesser welding method .The tube like sheath is corrugated after welding to improve the flexibility.

Cable selection / Design parameters

Cable design mainly depends on

• System voltage • Impulse level • Fault level & duration • Ground & air temperature • Thermal resistivity of soil

Breakthrough in EHV cables Polycab has already designed, manufactured, type tested and supplied their 132 kv cable to customers in the Indian origin. Our 132 kv sample is successfully type tested for qualifying the electrical & other critical tests that are carried out at CPRI Bangaluru to establish the good quality of a product. We now move forward with enthusiasm to continuously improve and evolve our manufacturing processes and technology acumen so that our journey to the next higher voltage grade of cables is easier, smooth, and faster.

IMPORTANT FORMULAE

IMPORTANT FORMULAE * TO CALCULATE VARIOUS ELECTRICAL PARAMETERS OF CABLES

1) Inductance :

$$L = K + 0.2 \log_e \frac{2S}{d} \text{ (mH/km)}$$

where K = Constant for different stranded conductors
S = Axial Spacing between Cables Conductors in mm.
d = Conductor Diameter

No. of wires in Conductor	K
7	0.0642
19	0.0554
37	0.0528
61 and above	0.0514
1(Solid)	0.0500

2) Reactance:

$X = 2\pi f \times L \times 10^{-3}\ \Omega/km$

where f = frequency
L = Inductance

3) Impedance :

$Z = (R^2 + X^2)^{1/2}\ \Omega/km$

where R = A.C Resistance at operating temperature Ω/km
X = Reactance

4) Charging Current :

$A = Uo \times 2\pi \times f \times C \times 10^{-6}$ Amp/km

C = Cable capacitance in μf/km

Uo= Voltage in Voltes

5) Voltage Drop :

For 3 Core Cables : $\sqrt{3} \times Z$ mv/A/mtr

For 1 Core Cables : 2 x Z mv/A/mtr

where Z = Impedance in ohm/km

6) Capacitance:

$$C = \frac{Er}{18 \log_e (D/d)} \text{ (μf / km)}$$

where Er = Relative Permitivity for XLPE : 2.3
D = Dia over Insulation in mm
d = Dia over conductor screen in mm

7) Dielectric loss in watts per km/phase:

$2\pi f \times C \times Uo2 \tan \cdot 10\text{-}6$ (watt / km per phase)

where C = Capacitance in μf/km
Uo = Power frequency voltage between conductor & earth -V
Tanδ = Dielectric power factor
= 0.004 for XLPE

8) Voltage Induced in Sheath :

$E_s = I\ Xm$

where I = conductor current (A)
Xm = $2\pi fM \times 10\text{–}3$ (Ω / km)
M = $0.2 \log_e \frac{2S}{dm}$ (mH/km)
S = Distance between Cable Centres,
dm = Mean Diameter of Sheath

9) Short Circuit Rating:

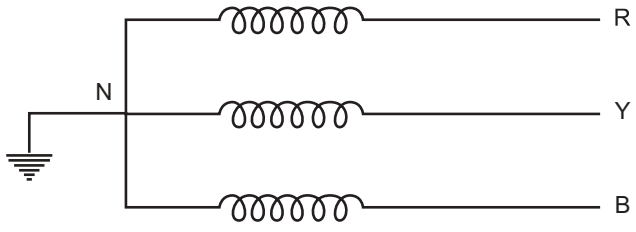
$$I^2 = \frac{K^2 S^2}{T} \log_e \left(\frac{\theta_1 + \beta}{\theta_0 + \beta} \right)$$

where I = Short circuit (R.M.S over duration) in Amps.
T = Duration of short circuit in second
K = Constant – 226 for Copper, 148 for Aluminium, 78 for Steel
S = Area of Conductor in mm2
θ_1 = Final Temperature of Conductor or Armour
θ_0 = Initial Temperature of Conductor or Armour
β = Reciprocal of the temperature coefficient of resistance of the conductor per ° C at 0° C (228 for Aluminium, 202 for Steel, & 234.5 for Copper)

* Source BICC handbook

EARTHED SYSTEM:

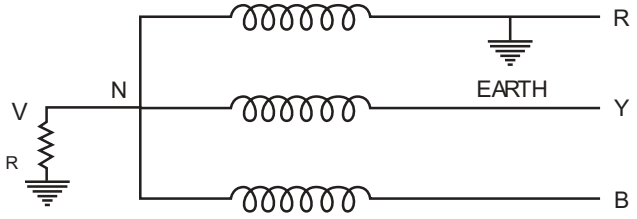
In the initial years, the generators and transformers were having capacities of few MVA and hence fault current was also less. The star point or neutral point was solidly grounded and this is called earthed system.



In this system if an earth fault occurs on any of the phases, the voltages of other two healthy phases with respect to the earth remain the same.

UNEARTHED SYSTEM:

Today generators of 500 MVA capacity are incommercial use. More over several mega power stations are connected to grid. Due to this, the fault level has increased tremendously. In case of an earth fault, a heavy current flows in to the fault and this may damage the costly generators and power transformers.



In this case if an earth fault occurs on R phase, the voltage of the faulty phase with respect to the earth (R) appears across the current limiting resistance or reactance in the earth circuit of the star point and as a result the voltage of the star point which was at earth potential under normal conditions rises to VR. Due to this the voltages of other two healthy phases (B and Y) with respect to the earth rises by 1.7 times (Vector sum of VR and VB). If the insulation of these phases are not designed for these increased voltages they may develop earth fault. This is called Unearthed System.

* source BICC handbook

* Source BICC handbook

POLYCAB
Connection Zindagi Ka

POWER

OIL & PETROLEUM

EPC CONTRACTORS

CONSTRUCTION

IT PARKS

INFRASTRUCTURE

STEEL METAL & NON METAL

RENEWABLE

CEMENT

OTHERS

Notes

POLYCAB

Connection Zindagi Ka

Regional & Branch Offices:

EAST

BHUBANESWAR : A-167, Unit No. 102, First Floor, The Metropolis, Near Sparsh Hospital, Saheed Nagar, Bhubaneswar - 751007, Odisha. Tel. 0674 2549960

GUWAHATI : 4th Floor, Mayur Garden, Near ABC Bus Stop, G.S. Road, Guwahati - 781005, Assam, India.

KOLKATA : Unit No. 1108, 11th Floor, Godrej Genesis, Plot-XI, Block EP & GP Salt Lake, Sector - V, Kolkata - 700091.

PATNA : L-302, 303, Dumraon Palace, 3rd Floor, Fraser Road, Near Dakbangla Crossing, Patna - 800001.

RANCHI : Panchwati Tower Unit No. 3, Gr. Floor Harmu Road, Ranchi - 834001. Tel. 0651 2284040

NORTH

CHANDIGARH : S.C.O. 10-11-12, 1st Floor, Sec 17 B, Chandigarh - 160017. Tel. 0172 5001548, 49

LUCKNOW : Shalimar Square, Office No - 09, 126/31, B. N. Road, Lalbagh, Hazratganj, Lucknow - 226001. Tel. 0522 4022324

NOIDA : B9, 1st Floor Sector - 3, Near Bajaj Bhawan, Noida - 201301. Tel. 0120 4848550

DEHRADUN : 57 GDG Tower Adjoining Hotel Calista Patel Nagar Dehradun, Uttrakhand - 248001 Tel. 0135 2728758

JAIPUR : 501 & 502, 5th Floor, K.J City Tower, Plot No. E-2, Ashok Marg, Near Ahinsha Circle, C-Scheme, Jaipur, Rajasthan - 302001. Tel. 0141 2216097

WEST

AHMEDABAD : 102-1st Floor, Hrishikesh, Nr. IDBI Bank Cross Road, Gulbai Tekra, Ahmedabad - 380006. Tel. 079 26301655

INDORE : B-12, New Siyaganj, Patthar Godam Road, Indore - 452003. Tel. 0731 4033357

WEST

PUNE : Off No. 36, Sangam Project Phase 2, Near RTO Pune, Near Sangam Bridge, Pune - 411001.
Tel. 020 26058277

RAIPUR : 506, 5th Floor, Wallfort Ozone, Near Fafadih Chowk, Raipur - 492001, Tel. 0771 2582925, 4221686

NAGPUR : Shree Ganesh Enclave, Plot No. 12, 1st Floor, Near ST Stand, Ganeshpeth, Nagpur - 440018

SOUTH

KOCHI : 34/138 C, NH By-Pass Road, Edappally, Kochi - 682024. Tel. 0484 2803285

BENGALURU : B-78, No. 18, 4th Main Road, KSSIDC Industrial Estate, 6th Block, Rajajinagar, Bangalore - 560010.
Tel. 080 23102172 / 8354

HUBLI : Shop No. 99 to 119, 4th floor, Satellite Complex, Koppikar Road, Hubli - 580020, Tel. 0836 4259866

COIMBATORE : Kaanchan, Gr. Floor, No. 9, North Huzur Road, Coimbatore - 641018. Tel. 0422 2305339

CHENNAI : Gee Gee Universal, 8th Floor, No. 2, Mc Nichols Road, 3rd Lane, Near Metha Hospital, Chetpet, Chennai - 600 031.
Tel. 044 42817272

SECUNDERABAD : 208-209, 2nd Floor Bhuvana Towers, S. D. Road, Secunderabad - 500003, Tel. 040 66326228

VIJAYAWADA : Plot No. 77, House No. 40-5/7-6, 3rd Cross, Municipal Employees Colony, Vijayawada - 520010.
Tel. 0866 6601666

VISAKHAPATNAM : 3rd Floor, Krishna Enclave, Seethammapeta Main Road, Visakhapatnam - 530016.

Corporate Office:
POLYCAB INDIA LIMITED **(formerly known as 'Polycab Wires Limited')**
Polycab House, 771, Mogul Lane, Mahim (W), Mumbai - 400 016, Maharashtra (India)
Ph.: +91-22-2432 7070/4, 6735 1400, Email: enquiry@polycab.com, Toll Free No.: 1800 267 0008, www.polycab.com

HT XLPE Cable / Jan / 2020

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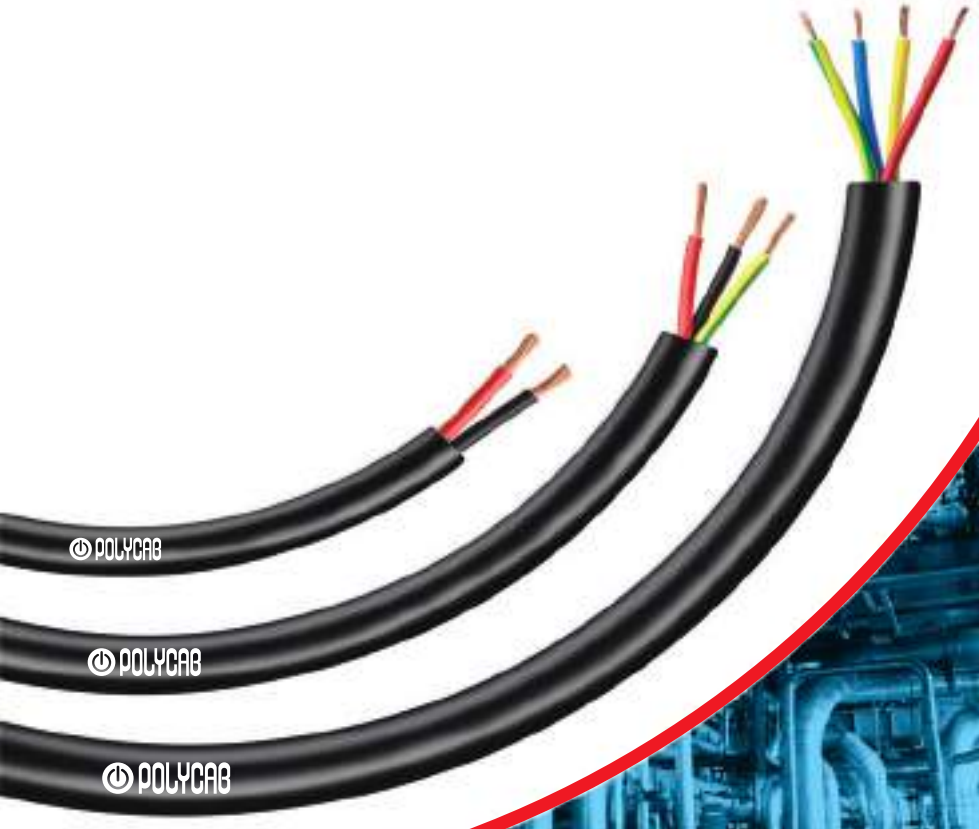
PVC Flexible Wires & Cables



ISO 9001:2008

ISO 14001:2004

OHSAS 18001:2007

IS 7098 (Part I)

POLYCAB
Connection Zindagi Ka

Polycab is a market leader in power, control and industrial cables. Polycab is the fastest growing company in cable industry, offering the widest range of cables. Polycab single & multi core PVC Industrial cables find a wide range of applications in the control panels, appliances, machine tools, machinery and are used in almost every industry.

Conductors : The conductors are drawn from bright electrolytic grade copper, annealed and bunched together (multi-standed) as per class 5 of IS 8130 : 2013

Insulation: Bunched conductors are insulated with specially formulated in-house developed PVC compound having high insulation resistance value. The insulation process is carried out on modern high speed extrusion lines with a high degree of accuracy, thus ensuring consistency in performance.

Sheathing : In case of multi core cable, the insulated cores are laid up to form the core assembly, Sheathing is provided with specially formulated PVC compound to facilitate stripping as also to withstand mechanical abrasion while in use.

Quality Control : You are assured of the highest quality standards in every Polycab product. Stringent quality control tests are applied at every stage from raw material to finished goods stage so as to give you the best product, meeting relevant quality standards.

Polycab PVC insulated Industrial Cables are manufactured as per IS 694 : 2010, in single core sizes from 0.5 sq. mm to 50 sq. mm and multi core sheathed cables in sizes 0.5 sq. mm to 4 sq. mm upto 5 cores. These cable sizes are ISI marked and are duly approved by FIA/TAC. The remaining sizes generally conform to IS 694 : 2010.

Cables as per BS EN : 50525 and BS EN : 50525 can be made available for export market. Special purpose braided cables/screened instrumentation cables are also available.

SINGLE CORE / MULTI CORE INDUSTRIAL CABLES AS PER IS 694 - 2010
VOLTAGE GRADE UP TO 1100 VOLTS

TABLE NO.1

POLYCAB BARE COPPER CONDUCTOR, PVC INSULATED UNSHEATHED 1100 V, SINGLE CORE INDUSTRIAL WIRE AND CABLE FOR PANEL BOARD AS PER IS : 694 - 2010 WITH ISI MARK (UP TO 50 SQ.MM)

Nominal Area in Sq. mm.	Max. DC Resistance Ohm/Km at 20°C	Nominal Insulation Thickness in mm.	Outer Diam (Approx)	Current Rating in Amps.	Nominal Area in Sq. mm.	Max. DC Resistance Ohm/Km at 20°C	Nominal Insulation Thickness in mm.	Outer Diam (Approx)	Current Rating in Amps.
0.50	39.00	0.60	2.1	4	70	0.272	1.4	13.44	215
0.75	26	0.60	2.27	7	95	0.206	1.6	15.46	260
1.00	19.50	0.60	2.44	12	120	0.161	1.6	17.16	305
1.50	13.30	0.60	2.66	16	150	0.129	1.8	19.08	355
2.50	7.98	0.70	3.27	22	185	0.106	2.0	21.2	415
4.00	4.95	0.80	3.99	29	240	0.0801	2.2	24.12	500
6.00	3.300	0.80	4.52	37	300	0.0641	2.4	27.04	585
10.00	1.910	1.00	5.9	51	400	0.0486	2.6	30.5	695
16.00	1.210	1.00	7.0	68	500	0.0384	2.8	34.96	790
25.00	0.780	1.20	8.77	86	630	0.0287	2.8	37.98	905
35.00	0.554	1.20	9.67	110	800	0.0224	3.2	43.72	1050
50.00	0.386	1.40	11.44	145	1000	0.0178	3.2	47.72	1185

NOTE : Industrial cables above 50 Sq. mm are not covered by IS : 694 but are as per IS. 2465. The conductor will be multi-standed as per class 5 of IS 8130 : 1984

TABLE NO.2

POLYCAB BARE COPPER CONDUCTOR, PVC INSULATED AND SHEATHED 1100V MULTICORE INDUSTRIAL CABLES AS PER IS:694/1990 WITH ISI MARK

Nominal Area in Sq. mm.	Max. DC Resistance Ohm/Km at 20°C	Nominal Insulation Thickness in mm.	Core diam. (mm.)	Nominal Sheath Thickness in mm.			Overall Diameter in mm. (Approx)			Current Rating in Amps.		
				2 core	3 core	4 core	2 core	3 core	4 core	2 core	3 core	4 core
0.50	39.00	0.60	2.20	0.90	0.90	0.90	6.08	6.41	6.96	4	3	3
0.75	26.00	0.60	2.40	0.90	0.90	0.90	6.44	6.8	7.39	7	6	6
1.00	19.50	0.60	2.60	0.90	0.90	0.90	6.78	7.17	7.8	12	10	10
1.50	13.30	0.60	2.80	0.90	0.90	1.00	7.22	7.65	8.34	16	14	14
2.50	7.98	0.70	3.50	1.00	1.00	1.00	8.64	9.16	10.01	20	18	18
4.00	4.95	0.80	4.30	1.00	1.00	1.00	10.08	10.94	11.98	27	24	24

TABLE NO.3

POLYCAB PLAIN COPPER CONDUCTOR, PVC INSULATED AND SHEATHED 1100 V MULTICORE INDUSTRIAL CABLES

Nominal Area in Sq. mm.	Max. DC Resistance Ohm/Km at 20°C	Nominal Insulation Thickness in mm.	Core diam. (mm.)	Nominal Sheath Thickness in mm.			Overall Diameter in mm. (Approx)			Current Rating in Amps.		
				2 core	3 core	4 core	2 core	3 core	4 core	2 core	3 core	4 core
6	3.30	0.80	4.80	1.10	1.20	1.20	11.36	12.28	13.46	34	30	30
10	1.91	1.00	6.30	1.30	1.40	1.40	14.50	15.66	17.28	44	39	39
16	1.21	1.00	7.30	1.40	1.40	1.40	16.94	18.06	19.88	61	55	55
25	0.780	1.20	9.10	1.40	1.50	1.60	20.48	22.10	24.58	69	60	60
35	0.554	1.20	10.10	1.60	1.60	1.70	22.70	24.85	26.98	88	77	77
50	0.386	1.40	11.90	2.00	2.00	2.00	27.04	28.89	31.86	116	102	102
70	0.272	1.40	13.90	2.20	2.20	2.20	31.48	33.65	37.15	155	140	140
95	0.206	1.60	16.30	2.40	2.40	2.40	35.94	38.43	42.45	190	165	165

TABLE NO.4

POLYCAB MULTICORE ROUND INDUSTRIAL CABLE (6 CORES TO 30 CORES) 1100 V GENERALLY CONFORMING TO IS : 694 / 2010

	Area Sq. m	0.50	0.75	1.00	1.50	2.50	4.00
	Conductor Diam in mm.	0.94	1.20	1.34	1.64	2.08	2.61
	Avg. Insu thickness mm.	0.60	0.60	0.60	0.60	0.70	0.80
	Core Diam in mm.	2.20	2.50	2.60	2.90	3.50	4.30
	No of Cores						
6	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	0.90 8.17	1.00 8.91	1.00 9.42	1.00 10.08	1.10 12.13	1.20 14.50
7	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	0.90 8.17	1.00 8.91	1.00 9.42	1.00 10.08	1.10 12.13	1.20 14.71
8	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.00 9.01	1.00 9.82	1.00 10.38	1.10 11.11	1.20 13.55	1.30 15.93
10	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.00 10.46	1.10 11.40	1.10 12.08	1.10 12.96	1.30 15.82	1.40 18.90
12	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.00 10.79	1.10 11.76	1.10 12.47	1.10 13.39	1.30 16.34	1.40 19.54
14	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.10 11.74	1.10 12.33	1.10 13.08	1.20 14.25	1.30 17.16	1.40 20.76
16	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.10 12.14	1.20 13.19	1.20 14.0	1.20 15.02	1.40 18.31	1.50 21.91
19	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.10 12.77	1.20 13.87	1.30 14.94	1.30 16.04	1.40 19.29	1.50 23.11
24	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.20 15.06	1.30 16.36	1.40 17.58	1.40 18.9	1.50 22.98	1.60 27.20
30	**Avg. Sheath thickness mm.** **App Overall Diam mm.**	1.30 16.17	1.30 17.29	1.40 18.38	1.40 19.99	1.50 23.90	1.60 28.94
	Max Conductor Resistance in Ohm/km at 20°C	39.00	26.00	19.50	13.30	7.98	4.95
	Recommended Current Rating in AMP	4	7	12	16	22	29

The above data is indicative and may be revised without prior information. • Polycab will not be liable for any damages arising out of incorrect application.

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Co-Axial Wires

Range: RG 59 F, RG 6 F, RG 6 CCS,
RG 11 F, RG 11 F CCS
Unarmoured & Armoured

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JELLY FLOODED COAXIAL CABLES

Polycab, the market leaders in Power & Control Cables and Fastest growing Company in the Cable industry,offer the widest range of cables and wires in the country. Polycab Coaxial Cables for Cable TV Network are manufactured at its ultra modern plant at Daman. The stringent quality control measure coupled with Company's R&D efforts ensure production of Coaxial Cables that are technologically superior and provide an ideal combination of electrical Cables the preferred choice for a variety of applications in CATV network.

The center conductor is made of solid electrical grade 99.97 pure copper to ensure better signal transmission. The conductor is insulated with nitrogen gas, which is superior and environment friendly as compared to chemical foam. The double screen of special composite type bonded aluminium foil and special grade aluminium alloy branding of 60 % coverage ensure low loss in signal quality, additional mechanical strength and resistance to oxide formation in tropical whether conditions. The specially in-house formulated PVC compound used in the jacketing is UV and abrasion resistant.

Polycab Coaxial Cables are fully tested for all parametres by computerized analyzer. Coaxial cables with steel wire armouring can also be supplied for underground applications.

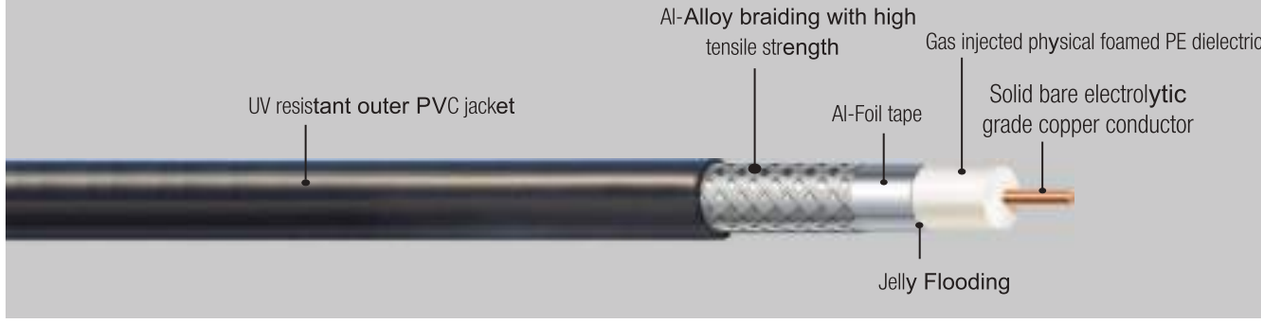
FEATURES & ADVANTAGES

• **Minimum loss in signal quality :** better reception • **Higher band width :** larger network expansion, 100 plus channels • **Low attenuation value :** less electromagnetic interference • **Minimum structural return loss** • **Moisture proof :** Ideal for tropical conditions

CONSTRUTION PARAMETERS	RG 11F	CABLE TYPE RG 6F	RG 59F
CENTER CONDUCTOR	solid bare copper	solid bare copper	solid bare copper
Nom. Dia. (mm)	1.63	1.02	0.80
DIELECTRIC Nom. Dia. (mm)	Foam PE 7.11	Foam PE 4.57	Foam PE 3.55
OUTER CONDUCTOR 1st Shield 2nd Shield Min. Coverage (%)	 Al-Foil Bonde Al-Alloy Branding 60	 Al-Foil Bonde Al-Alloy Branding 60	 Al-Foil Bonde Al-Alloy Branding 60
Flooding Compound	Jelly	Jelly	Jelly
JACKET Nom. Dia. (mm)	PVC Black 10.30	PVC Black 7.25	PVC Black 6.20
BENDING RADIUS (mm)	70	60	60

ELECTRICAL PARAMETERS	RG 11F	CABLE TYPE RG 6F	RG 59F
Center conductor (Max. resistance at 20°)	0.85 ohm/100mtr.	2.14 ohm/100 mtr.	3.55 ohm/100mtr.
Nom. Capacitance (PF/Mtrs.)	53 + 3	53 + 3	53 + 3
Characteristics Impendance (ohms)	75 + 3	75 + 3	75 + 3
Nom.Velocity Ratio (%)	85	85	85
Attenuation @ 20° c (db/100 Mtrs.) at			
5 MHZ	1.25 db	1.95 db	2.82 db
55 MHZ	3.15 db	5.20 db	6.73 db
211 MHZ	6.23 db	9.50 db	12.47 db
250 MHZ	6.72 db	10.50 db	13.45 db
300 MHZ	7.38 db	11.50 db	14.60 db
350 MHZ	7.94 db	12.45 db	15.75 db
400 MHZ	8.53 db	13.30 db	16.73 db
450 MHZ	9.02 db	14.35 db	17.72 db
550 MHZ	9.97 db	15.70 db	19.52 db
600 MHZ	10.43 db	16.45 db	20.34 db
750 MHz	11.97 db	18.35 db	22.87 db
865 MHZ	13.05 db	19.95 db	24.67 db
1000 MHz	14.27 db	21.45 db	26.64 db

CONSTRUCTION OF COAXIAL CABLE



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Coaxial Cable / Jan / 2020

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CCTV

CABLES

Transporting the clearest signals from the camera to your screens

Enhance your security measures with Closed Circuit Televison (CCTV) Cables from Polycab

POLYCAB CCTV

POLYCAB CCTV Cables are offered in two types namely 4+1 CCTV Cable and 3+1 CCTV Cable. Coaxial cables form the carrier for video signal and the other '4 cores' or '3 cores' form the carriers for power. Coaxial cables are designed to transmit the complete video frequency range with minimum distortion or attenuation, making them an excellent choice for CCTV. Polycab CCTV cables are designed to optimize the quality of video signals, which are transmitted through the Coaxial cable in the CCTV cable. The Coaxial cable consists of solid annealed bare copper conductor of electrolytic grade which is insulated with foamed dielectric, aluminium foil taped, jelly flooded, braided with Al. Alloy and then jacketed with UV PVC. Topmost quality of construction of coaxial cable in Polycab CCTV cables ensures distortion free video signals and thus a clear picture over complete low frequency bandwidth of transmission in such applications. The impedance of coaxial cable is 75, which matches the CCTV equipment. This matching ensures adequate signal strength, no reflection and best picture quality. In CCTV the coaxial cable is of type RG-59 which has highest attenuation compared to RG-6 and RG-11. Hence, it is recommended for use only for distances up to 300ft. Foamed dielectric delivers excellent electrical properties such as low capacitance and high velocity of propagation. This results in low-loss characteristics and reduced attenuation of the video signal. Aluminium foil and Al. Alloy braiding of 60% coverage ensures complete elimination of MEI/RFI from the video signals and also provides a reduced DC resistance ground path. Jacketing with UV PVC is ideal for all indoor and outdoor applications.

DATA SHEET FOR CCTV CABLE

SR. NO.	CONSTRUCTION	MATERIAL/ UNIT	POLYCAB	POLYCAB
	CABLE SIZE	**POWER CABLE**	**CCTV Cable 4C+1**	**CCTV Cable 3C+1**
	CABLE SIZE		**0.5 MM**	**0.5 MM**
1 a)	**CONDUCTOR**	ABC		
	NO OF STRANDS	NOS	1	1
	STRAND DIA (Nominal)	MM	0.5 ± 0.02	0.5 ± 0.02
2 a)	**INSULATION**	HDPE		
	THICKNESS (Nominal)	MM	0.20	0.20
	COLOUR		Red, Yellow, Blue, Brown	Red, Yellow, Blue
		CO-AXIAL CABLE		
1 b)	**CONDUCTOR**	ABC		
	INNER CONDUCTOR DIAMETER	MM	0.80 ± 0.005	0.80 ± 0.005
2 b)	**INSULATION**	FOAM HDPE		
	THICKNESS (Nominal)	MM	1·375	1·375
3	**AL - FOIL**	AL - FOIL		
	DIA OVER INNER SHIELD	MM	3.75	3.75
	WIDTH (Nominal)/COVERAGE	MM%	15/100	15/100
4	**BRAIDING**	AL.ALLOY		
	WIRE DIA (Nominal)	MM	0.12	0.12
	BRAIDING COVERAGE	%	60	60
5	**CO-AXIAL OUTER SHEATH**	PVC ST3		
	COLOUR	BLACK	BLACK	BLACK
	THICKNESS (Nominal)	MM	0.40	0.40
6	**OVER ALL OUTER SHEATH**	ST3	PVC	PVC
	COLOUR	WHITE	WHITE	WHITE
	THICKNESS (Nominal)	MM	0.50	0.50

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Make the right connections

LAN CABLES

UTP 4 PAIR CAT 5 / 5e

ISO 9001:2008

UTP Cat 5e & Cat 6 Lan Cables

POLYCAB brings to you LAN Cables best suited to your specific Applications. These are certified by the world renowned Under Writers Laboratories Inc. USA (UL). The Cables are verified to the performance category
- 5 / 5e requirements of TIA/EIA 568 - A & UL 444 for Transmission performance.

Polycab Lan cables are suitable for voice, Data, Video and Low Voltage Control, It is suitable for all Lan topologies including Horizontal and Vertical distribution Plenum and Riser.

The conductor is made of Electrolytic plain annealed solid copper of size 0.5 mm., High quality Polyethylene Insulated with suitable colour code, twisted pair, Unshielded light grey PVC Jacketed with improved fire characteristic meeting requirements of IEC - 332 - high oxygen and temperature index.

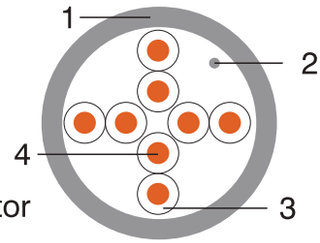
The UL ISO - 9002 certification ensures the quality of cables and its intended performance.

Salient Features

- Low attenuation and crosstalk
- Low Structural return Loss
- UL verified cables

Construction of cables

1 PVC Jacket
2 Rip Cord
3 PE Insulation
4 Bare Copper Conductor



Verified by :
Underwriters Laboratories Inc.® USA

ISO 9001:2008

Technical Data - physical		
• Conductor	-	Solid Bare Copper
• Nom Dia. of Cond.	-	0.5 mm.
• Insulation	-	Special grade PE
• Colour Code		
Pair - 1		White - Blue
Pair - 2		White - Orange
Pair - 3		White - Green
Pair - 4		White - Brown
• Outer Jacket	-	FR PVC
Nom Overall Die	-	5.4 mm.
• Jacket Colour	-	Grey
• Packaging	-	Reflex Box 1000 ft. (305 M)

Technical Data - Electrical

Frequency MHz	Attenuation dB 100 M (MAX)	Next Worst Pair dB (MIN)		Structural Return Loss (SRL) dB MIN
		CAT-5	CAT-5e	
0.772	1.8	64	64	N. A.
1.00	2.0	62	62.3	23
4.00	4.1	53	53.3	23
8.00	5.8	48	48.8	23
10.00	6.5	47	47.3	23
16.00	8.2	44	44.3	23
20.00	9.3	42	42.8	23
25.00	10.4	41	41.3	22
31.25	11.7	39	39.9	21
62.50	17.0	35	35.4	18
100.00	22.0	32	32.3	16

Parametric Characteristics	
DC Resistance @ 20°c (Max)	9.38 Ω / 100 M
Capacitance Unbalance Pair to Ground (Max)	330 pF / 100 M
Mutual Capacitance (Max)	5.60 nF / 100 M
Characteristics Impedance	100 ± 15 Ω
Nominal Velocity of Propagation	66%
Delay Skew (Max)	45 ns
Propagation Delay @ 20°c, 100 MHz	538 ns / 100 M

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POLYCAB

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SOLAR CABLE

'Empowering Your Life'

Features

- Electron beam cross linked compound
- UV, ozone, temperature & hydrolysis resistant
- Flame retardant, low smoke
- Excellent encapsulation
- Very long /service life >25 years.

Brochure 2018

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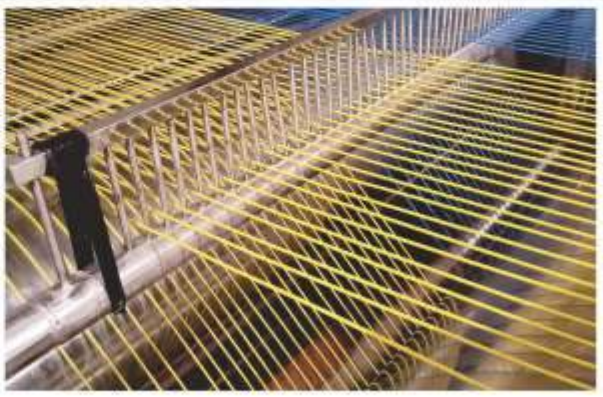
Technical Specification



Construction:

- Conductor: tinned copper conductor IEC 60228, Class 5
- Insulation/sheath: electron beam cross linked halogen free & flame retardant compound (XLPO)

Electrical:

- Voltage test**:** 6500V as per EN 50395.
- Max permissible operating voltage: DC 1.5Kv (conductor-conductor, non earthed system).
- Nominal voltage: AC - 0.6/1 Kv, DC - 900/1.5 Kv.

Temperature:

- Ambient Temperature: -40˚C to + 90˚C.
- Max conductor temperature: 40˚C to 120˚C.

Max bending radius:

- 5 *OD (fixed installation)
- 15 *OD (occasional moved)

Standards / Material Properties:

- Fire performance: IEC 60332-1-2
- Smoke emission: IEC 61034/ EN 50268-2
- Halogen free: EN 50267-2-1/-2, IEC 60754-2
- Toxicity: EN 50305, ITC - index <3
- Ozone Resistant: EN50396
- Weathering UV: HD 605/A1 or DIN 53367
- Approvals: EN 50618; H1Z2Z2-K

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Solar DC Cables from PV Module to Array Junction Box

(as per TUV Specification- EN 50618 : 2014)

Single Core In Sq. mm.	E-BEAM XLPO Insulation thickness- Nominal in mm.	E-BEAM XLPO Sheath thickness- Nominal in mm.	Overall Diameter in mm.	Tolerance on diameter	Tinned Copper Maximum Resistance @ 20°C (ohms-Ω/Km)	Current Carrying Capacity (Single Cable in Air) (in Amps - A)
1.5	0.7	0.8	4.8	+/- 0.4	13.70	30
2.5	0.7	0.8	5.2	+/- 0.4	8.210	41
4	0.7	0.8	5.8	+/- 0.4	5.090	55
6	0.7	0.8	6.4	+/- 0.4	3.390	70

Solar DC Cables from Array Junction Box to Main Junction Box & MJB to Inverter

(as per TUV Specification- EN 50618 : 2014)

Single Core In Sq. mm.	E-BEAM XLPO Insulation thickness- Nominal in mm.	E-BEAM XLPO Sheath thickness- Nominal in mm.	Overall Diameter in mm.	Tolerance on diameter	Tinned Copper Maximum Resistance @ 20°C (ohms-Ω/Km)	Current Carrying Capacity (Single Cable in Air) (in Amps - A)
10	0.7	0.8	7.3	+/- 0.4	1.950	98
16	0.7	0.9	8.6	+/- 0.4	1.240	132
25	0.9	1.0	10.4	+/- 0.4	0.795	176
35	0.9	1.1	11.8	+/- 0.4	0.565	218
50	1.0	1.2	13.8	+/- 0.4	0.393	276
70	1.1	1.2	15.6	+/- 0.4	0.277	347
95	1.1	1.3	17.7	+/- 0.4	0.210	416
120	1.2	1.3	19.5	+/- 0.5	0.164	488
150	1.4	1.4	21.6	+/- 0.5	0.132	566
185	1.6	1.6	24.2	+/- 0.5	0.108	644
240	1.7	1.7	27.1	+/- 0.5	0.0817	775

SOLAR CABLE

'Empowering Your Life'

APPLICATIONS OF ELECTRON-BEAM
CROSS LINKED CABLES

Requirements of
the railway industry

Requirements of
the Solar industry

Requirements of
the wind energy

Requirements of
the automotive industry

Requirements for
coil winding

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For Consumer Complaint Contact : Officer, Consumer Care Cell
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Tel: 91-22-2432 7070 - 4,6735 1400 | Fax: 91-22-24327075
Email: customercare@polycab.com
Website: www.polycab.com | Toll Free No.: 1800 267 0008

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