WAACAB

Power Stable WAA Cable

An ISO 9001:2015 Certified Company

India's Leading Cables & Wires Solution Provider

WAA Cables Private Limited is new Venture of WAAREE Group founded in 1989 with headquarter at Mumbai. WAAREE Group is amongst the top players in India in providing EPC Services, Project Development, Solar Rooftop Solutions, Solar Water Pumps and also as an Independent Power Producer and has its presence in over 350+ locations nationally and 68 countries internationally. We are not only the largest Solar Module manufacturer in India, but also India's largest vertically integrated energy company.

WAA Cables Pvt. Ltd. have recently introduced Cable and Wire products like Solar Cable, Submersible Flat Cable, House Wire & Earthing Cable, Welding Cable, Rubber Battery Cable, Aluminum/Copper Armoured & Unarmoured 3C, 3.5C & 4C cables which are available in our product line.

Our Mission has remained constant to help clients to achieve continued success by developing consistently relevant solutions delivered through an outstanding client experience. Many of our solutions are unique, combining advice, investments, technology and operations into comprehensive solutions designed to help professional wealth managers to improve their business success, institutional investors to make better financial decisions and private clients to achieve their life and wealth goals.

Based on our corporate philosophy "WAA CABLES" will go beyond simply generating profits to develop forward thinking competencies by innovating our business models, developing environment-friendly high-quality products and reinforcing our partnerships with stakeholders as the best partner that will maximize customer values. We will open a brighter future by innovating and investing in technologies that push the envelope and developing the best total solutions.

Research and Development

Our entire range of products and systems are the result of continuous Innovation and Research & Development. We can provide competitive products in the market, which is becoming more and more demanding, thanks to our Modern, Automated Production Facilities and High Quality Standards.

SOLAR CABLES

Solar Cables are referred as a single conductor and smaller in diameter. This market is segmented into copper and aluminium alloy and currently copper-based cables are in maximum demand which is a reflection of its several advantages over aluminium alloys such as flexibility, low resistivity, stability, strength and better corrosion resistance.

Solar Cables are designed for connecting PV Power Supply Systems. They are dedicated to the PV system direct current side with a nominal D.C. voltage of a 1.5 kV. These cables can be used indoor & outdoor for flexible and fixed installations with high mechanical strength in extreme weather conditions. WAACAB Solar Cables are designed to withstand the environmental conditions that arise in any Fixed, Mobile, Roof or Architecturally Integrated Photovoltaic Installation.

PRODUCT CONSTRUCTION :

Key Feature : ● Flame Retardant, Low Smoke ● Max Conductor Temperature range 40°C to +120°C ● UV Resistant and Weather Resistant ● Expected Life 30 Years

Conductor : Flexible Electrolytic Tinned Fine Copper Strands Acc. to IEC 60228, Class 5

Insulation : Crosslinked Halogen Free & Flame Retardant Insulation

Outer Sheath : Crosslinked Halogen Free & Flame Retardant

Application : Solar Cables are intended for use in photovoltaic power supply systems and similar applications as free hanging, movable, fixed installation and buried in ground in constructional covered systems. The cables can be used indoor, outdoor, in hazard explosion areas, in industry and agriculture. They are suitable for applications in equipment with protective insulation. These cables are suitable for permanent outdoor long-term use under variable and harsh climate conditions.

DESIGN PARAMETERS OF SOLAR CABLE

Sr. No	Nominal Cross-Sectional (Sq. mm)	Approx. Cable Diameter (mm) as per EN 50618	Current Carrying Capacity @ Amb. 60 Deg.C			Max. Conductor Resistance at 20°C, (Ω/Km)
			Single Cable in Air (Amps)	Single Cable on Surface (Amps)	Two loaded cables touching, on a surface (Amps)	
1	1.5	5.0	30	29	24	13.7
2	2.5	5.3	41	39	33	8.21
3	4.0	5.9	55	52	44	5.09
4	6.0	6.6	70	67	57	3.39
5	10	7.5	98	93	79	1.95
6	16	8.7	132	125	107	1.24
7	25	10.5	176	167	142	0.795
8	35	11.9	218	207	176	0.565
9	50	13.9	276	262	221	0.393
10	70	15.7	347	330	278	0.277
11	95	17.8	416	395	333	0.21
12	120	19.6	488	464	390	0.164
13	150	21.7	566	538	453	0.132
14	185	24.4	644	612	515	0.108
15	240	27.3	755	736	620	0.0817

Standards : EN 50618 ; H1 Z2Z2 – K & IEC 60228

3 CORE - TITANIUM FLAT SUBMERSIBLE CABLES

WAACAB Titanium Flat Submersible Cables are the most demanding & unique product in the industry. It is made from finely stranded bare flexible copper conductor with high temperature bearing capacity. EPR insulation material use is covered with heavy duty EPR outer sheath which provide mechanical strength to the cable.

The rubber provides an abrasion-resistant, corrosion-resistant, waterproof, protective covering for an insulated electric cable. Because of its high stretch ratio, extensive resilience and waterproof ability, Flat Rubber Cable is used in various applications. Inheriting the same properties of a rubber, the rubber cables are ruling the commercial industries. These Flat Cable have in-toxic property, so its suitable for food and beverage industry. Because of its water-proof ability, Flat Rubber Cable are also resistant to steam and hot water.

PRODUCT CONSTRUCTION :

Key Feature : ● Designed for Heavy Duty Use ● Better Electrical Properties ● Resistant to Oils, Acids, Chemicals, Ozone & Solvents ● Temperature Range -40°C to +110°C

Conductor : Finely Stranded Bare Flexible Copper Conductor.

Insulation : Ethylene Propylene Rubber.

Outer Sheath : Heavy Duty EPR (Color - Black/Blue)

Application : These Flat Submersible Cables are used to connect the underwater submersible pump set with supply line, agriculture, irrigation domestic installation, outer application, power supply & for continuous use in deep well to supply power to submersible motors.

DESIGN PARAMETERS OF 3 CORE - TITANIUM FLAT SUBMERSIBLE CABLES

Sr. No.	Conductor		Rubber Insulation		Rubber Sheath		Current carrying capacity (Ampere)	Conduct or Resistance at 20°C (Max) ohms/km
	Size (Sq. mm)	No./Max. dia of strands (mm)	Nominal Thickness (mm)	Nominal Core Dia. (mm)	Nominal Thickness (mm)	Approx. overall dimensions (W X H) (mm)		
1	1.5	22/0.30	0.80	3.25	1.15	12.80 x 6.20	24	12.10
2	2.5	36/0.30	0.90	3.80	1.15	14.60 x 6.40	30	07.41
3	4.0	56/0.30	1.00	4.50	1.15	16.80 x 7.40	40	04.95
4	6.0	84/0.30	1.00	5.25	1.15	18.70 x 8.00	49	03.30
5	10	140/0.30	1.00	6.50	1.40	23.70 x 9.90	63	01.91
6	16	224/0.30	1.00	8.00	1.40	28.00 x 11.80	81	01.21
7	25	350/0.30	1.20	10.10	2.00	35.50 x 14.70	108	0.780
8	35	490/0.30	1.20	11.30	2.00	39.50 x 16.80	135	0.554
9	50	703/0.30	1.40	13.30	2.20	45.50 x 18.30	170	0.386
10	70	988/0.30	1.60	15.30	2.20	51.00 x 20.00	220	0.272
11	95	1349/0.30	1.60	18.00	2.40	60.00 x 23.50	265	0.206

Standards : Conforms to CENELEC HD 22.1.S2, DIN VDE 0282 part 810, IEC 245, CEI 20-19, BS 6007 & BS 6899

3 CORE - PLATINUM FLAT SUBMERSIBLE CABLES

WAACAB Platinum Flat Submersible Cables are specialized product used for Submersible Pumps in deep well. The area of installation is physically restrictive environment which is very hostile. The conductor is further insulated with thermoset type Cross Linked Polyethylene (XLPE) insulation with uniform thickness. The sheath is Thermoplastic Rubber Compound (TPE/TPR) which is excellent resistant to oil & water.

XLPE Insulated flat cable constitutes the best cable for industrial & agriculture because of its excellent electrical and physical properties. The excellent resistance to thermal deformation and the excellent aging property of XLPE cable permit it to carry large current under normal (90°C). These Flexible Flat Cable have in-toxic property, so its suitable for food and beverage industry.

PRODUCT CONSTRUCTION :

Key Feature : ● Designed for Heavy Duty Use ● Better Electrical Properties ● Resistant to Oils, Chemicals, Ozone & Solvents. ● Weather Resistant

Conductor : Finely Stranded Bare Flexible Copper Conductor

Insulation : Cross Linked Polyethylene (XLPE)

Outer Sheath : Oil & Water Resistant Thermoplastic Rubber Compound (TPE/TPR) (Colour - Grey)

Application : 3 Core Fat Cables are used for giving electrical connection to the Submersible Pump Motors. These are manufactured keeping in mind the severe, tough and difficult condition in which they have to operate.

DESIGN PARAMETERS OF 3 CORE – PLATINUM FLAT SUBMERSIBLE CABLE

Sr. No.	Conductor		XLPE Insulation	Rubber Sheath		Current carrying capacity (Ampere)	Conduct or Resistance at 20°C (Max) ohms/km
	Size (Sq. mm)	No./Max. dia of strands (mm)	Nominal Thickness (mm)	Nominal Thickness (mm)	Approx. overall dimensions (W X H) (mm)		
1	1.5	22/0.30	0.60	1.15	12.80 x 6.30	23	12.10
2	2.5	36/0.30	0.70	1.15	14.60 x 6.50	30	07.41
3	4.0	56/0.30	0.80	1.15	16.80 x 7.40	39	04.95
4	6.0	84/0.30	1.00	1.15	18.70 x 7.90	48	03.30
5	10	140/0.30	1.00	1.40	23.70 x 9.70	62	01.91
6	16	224/0.30	1.00	1.40	28.00 x 11.40	80	01.21
7	25	350/0.30	1.20	2.00	35.50 x 14.30	108	0.780
8	35	490/0.30	1.20	2.00	39.50 x 16.30	135	0.554
9	50	703/0.30	1.40	2.20	45.50 x 18.10	170	0.386

Standards : Conforms to IS 7098 (Part - 1), CENELEC HD 22.1.S2, DIN VDE 0282 Part 810, IEC 245, CEI 20-19, BS 6007 & BS 6899

3 CORE - GOLD FLAT SUBMERSIBLE CABLES

WAACAB Gold Flat Submersible Cables consist of finely stranded bare flexible copper conductor and the conductor is further insulated with thermoset type Cross Linked Polyethylene (XLPE) insulation with proper thickness and the sheath with proper thickness of moisture resistant type PVC (Grade ST2) compound.

The XLPE insulated flat cables undergo stringent quality check during raw materials, in process & final testing as per the laid down specifications. XLPE has lower density then PVC which makes them lighter in weight & hence the bending radius is smaller then PVC & it has higher mechanical properties. This cable is ideally suitable for giving the power connection in submersible pump motors used mainly in agriculture industries.

PRODUCT CONSTRUCTION :

Key Feature : ● Excellent Resistant to Moisture, Grease & Oil ● Excellent Mechanical ● Electrical & Chemical Properties ● Temperature Range -15°C to +85°C.

Conductor : Flexible Annealed Electrolytic Grade Bare Copper.

Insulation : Cross Linked Polyethylene (XLPE).

Outer Sheath : PVC Type ST2 (As Per IS 5831 1984)

Application: The XLPE Insulated and PVC Sheathed 3 Core Flat Cables are used for giving electrical connection to the Submersible Pump motors. These are manufactured keeping in mind the severe, tough and difficult condition in which they have to operate. The slot available in the tube well-being narrow the shape of the cables has to be suited for such an application. These cables are available in different sizes.

DESIGN PARAMETERS OF 3 CORE – GOLD FLAT SUBMERSIBLE CABLE

Sr. No.	Conductor		XLPE Insulation	PVC Sheath		Current carrying capacity (Ampere)	Conduct or Resistance at 20°C (Max) ohms/km
	Nominal Size in Sq. mm.	No./Max. dia of strands (mm)	Nominal Thickness (mm)	Nominal Thickness (mm)	Approx. overall dimensions (W X H) (mm)		
1	1.5	22/0.30	0.60	0.90	12.00 x 05.60	22	12.10
2	2.5	36/0.30	0.70	1.00	12.70 x 06.00	30	07.41
3	4.0	56/0.30	0.80	1.00	14.90 x 06.60	37	04.95
4	6.0	84/0.30	1.00	1.10	16.90 x 07.40	46	03.30
5	10	140/0.30	1.00	1.20	20.30 x 09.10	66	01.91
6	16	224/0.30	1.00	1.30	23.80 x 10.40	85	01.21
7	25	350/0.30	1.20	1.50	29.60 x 12.90	113	0.780
8	35	490/0.30	1.20	1.60	33.60 x 14.40	139	0.554
9	50	703/0.30	1.40	1.70	41.20 x 17.20	160	0.386

Standards : Conforms to IS 7098 (Part 1)

3 CORE - SILVER FLAT SUBMERSIBLE CABLES

WAACAB Silver Flat Submersible Cables contain stranded bare flexible copper conductor and the conductor is further insulated with Polyvinyl Chloride insulation with uniform thickness. The sheath is with uniform thickness of head and moisture resistant type PVC (Grade ST2) compound with black colour.

Flat Cable are manufactured for critical space requirement, protection against indefinite immersible in water under specified conditions, protection against rain water under specified conditions. These are manufactured keeping in mind the severe, tough and difficult conditions in which they have to operate. The slot available in the tube wellbeing narrow the shape of the cables has to be suited for such an application.

PRODUCT CONSTRUCTION :

Key Feature : ● Resistant to Moisture, Grease & Oil ● Weather Resistant ● Mechanical & Electrical Properties ● Temperature Range -15°C to +70°C

Conductor : EC Flexible Copper Conforms to IEC 60228, DIN VDE 0295, IS 8131.

Insulation : PVC Insulation Compound ST-1

Outer Sheath : Special PVC Compound (Black)

Application: Submersible Pump Cables are used as supply and control cables for engines for submersible pumps, underwater lighting and floating switches etc, up to the depth of 500 m and water temperature up to +70°C. These cables are ideal for outer installations in dry, moist and wet environments. Submersible Cable is specialized product used for Submersible Pumps, Solar Pumps, Agri Pumps etc. The area of installation is physically restrictive environment is very hostile.

DESIGN PARAMETERS OF PVC 3 CORE SILVER FLAT SUBMERSIBLE CABLE

Sr. No.	Conductor		PVC Insulation		PVC Sheath	Current carrying capacity (Ampere)	Conduct or Resistance at 20°C (Max) ohms/km
	Size (Sq. mm)	No./Max. dia of strands (mm)	Nominal Thickness (mm)	Nominal Core Dia. (mm)	Approx. overall dimensions (W X H) (mm)		
1	1.5	22/0.30	0.80	3.25	12.8 x 6.0	14	12.10
2	2.5	36/0.30	0.90	3.84	14.6 x 6.4	18	07.41
3	4	56/0.30	1.00	4.50	16.8 x 7.4	26	04.95
4	6	84/0.30	1.00	5.30	18.7 x7.9	31	03.30
5	10	140/0.30	1.00	6.50	23.7 x 9.9	42	01.91
6	16	224/0.30	1.00	8.00	28 x 11.6	57	01.21
7	25	350/0.30	1.20	10.10	35.5 x 14.7	72	0.780
8	35	490/0.30	1.20	11.30	39.5 x 16.2	90	0.554
9	50	703/0.30	1.40	13.60	45.5 x 18.3	115	0.386
10	70	988/0.30	1.40	15.30	51.0 x 20.0	143	0.272
11	95	1349/0.30	1.60	18.00	60.0 x 23.5	165	0.206

Standards : IS 694, IS 5831 & IS 8130 : 2013

RUBBER BATTERY CABLES

Battery Cables are used mainly to supply power to the Starter Motors. These Cables are widely used in place where functions of heavy-duty places and resistant to abrasion oil and water.

These cables are used for high current, long life and to supply high current necessary to operate the starter motor in cars, trucks, tractors, off-road vehicles and electric traction vehicles. It is also used for battery connections for telecommunication, power invertors, computers, solar & wind power battery etc.

Battery Cable is durable to a variety of chemicals and oils even at elevated temperatures, outperforming other elastomers. These cables are used low voltage circuit in automobiles such a vehicle and motor cycles, where high flexibility is required. Battery Cable do not readily support burning. Specially formulated compounds have been developed to further improve the flame retardant characteristics of our cables ensuring they will meet all vital flame tests.

PRODUCT CONSTRUCTION :

Key Feature : ● Tough & Flexible Cable with Excellent Resistance to Motor Oils, Battery Acid, Fuel, Ozone, Weathering & Hydrolysis and High Abrasion and Cut-Through Resistance ● Wide Temperature Range: -20°C to +90°C

Conductor : High Purity Electrolytic Grade Bright Annealed Flexible Bunched Bare Copper

Insulation : Heavy Duty Tough & Flexible Thermoplastic Elastomer Compound (TPE/TPR)

Application : Supplying high current necessary to operate the starter motor in cars, trucks, tractors, off-road vehicles and electric traction vehicles. It is also used for battery connections for telecommunication, power invertors, generators, computers, solar & wind power battery.

DESIGN PARAMETERS OF RUBBER INSULATED BATTERY CABLE

Sr No.	Cross Section area (nom.) sq.mm.	Insulation thickness (nom.) Mm	Overall diameter (approx.) mm	Conductor resistance at 20^0 C (max.) ohm/km	Current carrying capacity amps.
1	16	2.0	9.7	1.21	81
2	25	2.0	11.1	0.78	105
3	35	2.0	12.4	0.554	125
4	50	2.2	14.4	0.386	160
5	70	2.4	17.1	0.272	195
6	95	2.6	19.5	0.206	235
7	120	2.8	21.5	0.161	270
8	150	3.0	23.9	0.129	305
9	185	3.2	26.3	0.106	350
10	240	3.4	29.7	0.0801	405

Standards : Conforms to International Standards IS 2465, SAE J1127, ISO 6722, BS 6862, IEC 60245, AS/NZS 5000.1

SINGLE & MULTI-CORE CABLES

Single Core Cables are made up of a single conductor covered by a PVC insulation. They are mainly used in power and lighting circuits both domestic and commercial applications. They are also used in the internal wiring of appliances suitable for installation in conduits and trunking.

A single core wire is a cylindrical strand of metal. In single core wire there is only a single core of metal is present, mostly copper or aluminium. These wires are available in different thickness and gauges.

A Multicore Cable is a type of electrical cable that combines multiple signals or power feeds into a single jacketed cable. The term is normally used in relation to a cable that has more cores than commonly encountered. Not all cables with multiple insulated conductors are called multicore cables – the core in multicore refers to the number of usable connections made not the number of conductors or wires. In most of cases, a "usable connection" requires multiple conductors such as the positive and negative conductors used for DC power.

PRODUCT CONSTRUCTION :

Key Feature : ● Special Heat Resistant Insulation ● Higher Current Carrying Capacity ● Excellent Resistant to Moisture, Abrasion, Grease, Oil & Longer Flex Life ● Excellent Mechanical & Electrical Properties.

Conductor : Finely Stranded Bare Flexible Copper Conductor

Insulation : Polyvinyl Chloride

Outer Sheath : Polyvinyl Chloride

Application: Power wiring to appliance Sockets, Machineries, Industrial Lighting & Panel Boards, Batteries, D.C. Power Transfer etc.

DESIGN PARAMETERS OF SINGLE & MULTI - CORE CABLE

Sr. No.	Size (Sq. mm)	No./Max. dia of strands (mm)	Insulation Thickness (mm)	Outer Sheath Thickness (mm)			Max. Overall Diameter (mm)				Conductor Resistance at 20°C (Max) ohms/km	Current Rating Amps.
				2 Core	3 Core	4 Core	1 Core	2 Core	3 Core	4 Core		
1	0.50	16/0.20	0.6	0.9	0.9	0.9	2.6	6.90	7.3	8.0	39.0	6
2	0.75	24/0.20	0.6	0.9	0.9	0.9	2.8	7.30	7.7	8.4	26.0	9
3	1.00	32/ 0.20	0.6	0.9	0.9	0.9	3	7.60	8.1	8.8	18.10	14
4	1.50	30/0.25	0.6	0.9	0.9	1.0	3.4	8.90	9.4	10.4	12.10	18
5	2.50	50/0.25	0.7	1.0	1.0	1.0	4.1	10.30	10.8	12.0	7.41	24
6	4.00	56/0.30	0.8	1.0	1.0	1.0	4.8	11.60	12.4	13.60	4.95	32
7	6.00	84/0.30	0.8	1.1	1.2	1.2	5.3	13.0	13.8	15.47	3.30	33
8	10.0	140/0.30	1.0	1.3	1.4	1.4	7.0	16.50	17.7	19.5	1.91	45
9	16.0	224/0.30	1.0	1.4	1.4	1.4	8.1	19.4	20.6	23.0	1.21	60
10	25.0	350/0.30	1.2	1.4	1.5	1.6	10.2	23.8	29.3	28.5	0.780	75
11	35.0	490/0.30	1.2	1.6	1.6	1.7	11.7	27.2	34.6	32.7	0.554	95
12	50.0	703/0.30	1.4	2.0	2.0	2.0	13.9	32.0	39.6	38.6	0.386	125

Standards : IS 694 : 2010

HOUSE WIRE

House Wires consists of an electrical wiring system that distributes energy to be used in equipment and appliances around the house. It also involves the proper installation and operation of the electrical outlets, switches, breakers, meter base and different electrical circuits.

Homes typically have several kinds of house wiring including electrical wiring for lighting and power distribution, permanently installed and portable appliances, telephone, heating or ventilation system control, increasingly for home theatre and computer networks.

WAACAB is manufacturing a new range of electrical wires known as FR+HR/FRLS-H/ZHFR insulated wires, which provides additional safety and security. The wires are insulated with a flame-retardant compound, which helps to control the spread of fire even at very high temperature. It also protects against electrical shock and short circuit.

PRODUCT CONSTRUCTION :

Key Feature : ● High Flame Retardant Properties ● Resistant to Moisture, Abrasion, Grease, Oil & Zero Halogen Acid Gas Evolution ● Resistance to Tarnishing of Copper & Longer Flex Life ● Mechanical & Electrical Properties

Conductor : EC Grade Flexible Copper Class 5 Conductor

Insulation : FR+HR/FRLS-H/ZHFR Insulation compound with a high insulation resistance value (-15°C to +70°C / +90°C/ +105°C)

Application: Fixed installation in conduits and under plaster for Power Distribution to electrical appliances & Lighting in Houses, Commercial Complexes, Shopping Malls, Buildings, Industries, Hospitals, Apartments etc, where fire and electrical safety is most important.

Colors : Red, Blue, Black, Green & Yellow

DESIGN PARAMETERS OF HOUSE WIRE & SINGLE CORE FLEXIBLE CABLE

Sr. No.	Nominal Size in Sq. mm	No./Max. dia of strands (mm)	Nominal Insulation Thickness (mm)	Max. Overall Diameter (mm)	Conductor Resistance at 20°C (Max) ohms/km	Current Rating (Ampere)	
						Casing	Concealed
1	0.50	16/0.20	0.6	2.3	39.0	4.8	4.2
2	0.75	24/0.20	0.6	2.9	26.0	9.0	8.0
3	1.00	14/0.30	0.7	3.2	18.10	14	13
4	1.50	22/0.30	0.7	3.5	12.10	18	16
5	2.50	36/0.30	0.8	4.2	7.41	24	20
6	4.00	56/0.30	0.8	4.9	4.95	32	26
7	6.00	84/0.30	0.8	5.5	3.30	42	35
8	10	80/0.40	1.0	6.60	1.91	51	42
9	16	126/0.40	1.0	7.60	1.21	68	57
10	25	196/0.40	1.2	9.70	0.780	86	71
11	35	276/0.40	1.2	10.60	0.554	110	91
12	50	396/0.40	1.4	12.50	0.386	140	120

Standards : Conforms to IS 694, BS 6004, IEC 60227, DIN VDE 0281 -3, IS 8130 & IS 5831

3 CORE COPPER CONDUCTOR XLPE INSULATED ARMOURED CABLES

An Armoured Cable is a cable with a metal protective covering to ensure electrical continuity of the safety ground. Armoured cables are used in applications where cables will be exposed to mechanical or environmental damage under normal operating conditions. These applications include power circuits in industrial plants, commercial buildings, processing plants and central and substation utility applications.

Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

Key Feature : ● High Magnetic Conductivity ● Good Magnetic Shielding Effect ● Resist External Forces ● High Mechanical Strength & Better Electrical Properties
Conductor : Copper Solid or Stranded Wires Cass 1 or 2 According to IEC 60228.
Insulation : XLPE-Cross Linked Polyethylene Compound
Inner Sheath : Polyvinyl Chloride (PVC)
Armouring : Single Layer of GS Round Wire or Flat Strips
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application: An Armoured Cables are used outdoors, underground, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks.

DESIGN PARAMETERS OF 3 CORE COPPER CONDUCTOR XLPE INSULATED ARMOURED CABLE

Sr. No.	No. of cores & cross sectional Area (Sq. mm.)	Insulation XLPE Thickness mm	Inner Sheath PVC Thickness mm	Armour Size mm (G.I) W x H	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx. Weight KGS/km	Current Ratings (Amp.)	
									Direct in Ground	In Air
1	3 C X 1.5	0.70	0.30	1.40	1.24	13.20	12.10	375	23	22
2	3 C X 2.5	0.70	0.30	1.40	1.24	13.95	7.41	433	30	30
3	3 C X 4	0.70	0.30	1.40	1.24	15.45	4.61	546	44	39
4	3 C X 6	0.70	0.30	1.40	1.24	16.55	3.08	647	55	50
5	3 C X 10	0.70	0.30	4.0 X 0.80	1.40	19.10	1.83	648	74	67
6	3 C X 16	0.70	0.30	4.0 X 0.80	1.40	20.35	1.15	1058	94	85
7	3 C X 25	0.90	0.40	4.0 X 0.80	1.40	21.30	0.727	1196	120	125
8	3 C X 35	0.90	0.40	4.0 X 0.80	1.40	23.30	0.524	1521	145	155
9	3 C X 50	1.00	0.40	4.0 X 0.80	1.40	26.10	0.387	2026	170	190
10	3 C X 70	1.10	0.50	4.0 X 0.80	1.56	30.60	0.268	2658	210	235
11	3 C X 95	1.10	0.50	4.0 X 0.80	1.56	33.10	0.193	4359	250	290
12	3 C X 120	1.20	0.50	4.0 X 0.80	1.56	36.30	0.153	4276	285	330
13	3 C X 150	1.40	0.60	4.0 X 0.80	1.72	38.90	0.124	5266	315	375
14	3 C X 185	1.60	0.60	4.0 X 0.80	1.72	43.10	0.0991	6320	355	435
15	3 C X 240	1.70	0.70	4.0 X 0.80	1.88	47.80	0.0754	7913	410	510
16	3 C X 300	1.80	0.70	4.0 X 0.80	2.04	52.90	0.0601	9725	460	590

Standards : Conforms to IS 7098-1, BS 5467, IEC 60502-1, BS 7889

3 CORE COPPER CONDUCTOR XLPE INSULATED UNARMOURED CABLES

An Unarmoured Cables are usually composed by a few or several sets of wires in each group at least two wires are twisted like a rope, each conductor are insulated and often around single central twist, outer is wrapped with highly insulating cover layer. The cable has the characteristics of internal electricity and external insulation. The unarmoured cable is easy to install and use.

Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

Key Feature : ● Better Temperature Resistance ● Good Tensile Strength and Conductivity Ability ● High Mechanical Strength & Better Electrical Properties.
Conductor : Copper Solid or Stranded Wires Class 1 or 2 According to IEC 60228, IS 8130
Insulation : XLPE-Cross Linked Polyethylene Compound
Inner Sheath : Polyvinyl Chloride (PVC)
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application: Unarmored cable is mainly used for control systems, for energy supply which are installed outdoors & underground.

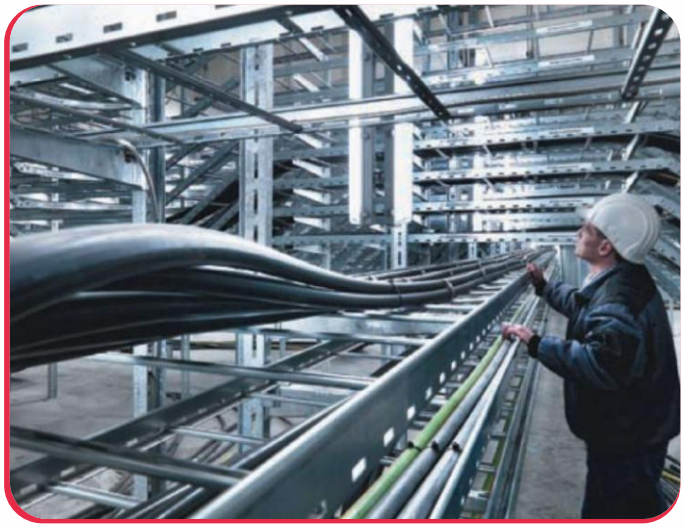
DESIGN PARAMETERS OF 3 CORE COPPER CONDUCTOR XLPE INSULATED UNARMOURED CABLE

Sr. No.	No. of cores & cross sectional Area (Sq. mm.)	Insulation XLPE Thickness mm	Inner Sheath PVC Thickness mm	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx. Weight KGS/km	Current Ratings (Amp.)	
								Direct in Ground	In Air
1	3 C X 1.5	0.70	0.30	1.80	11.60	12.10	185	23	22
2	3 C X 2.5	0.70	0.30	1.80	12.35	7.41	226	30	30
3	3 C X 4	0.70	0.30	1.80	13.85	4.61	304	44	39
4	3 C X 6	0.70	0.30	1.80	14.95	3.08	379	55	50
5	3 C X 10	0.70	0.30	1.80	17.10	1.83	541	74	67
6	3 C X 16	0.70	0.30	2.00	20.05	1.15	800	94	85
7	3 C X 25	0.90	0.40	2.00	20.10	0.727	946	120	125
8	3 C X 35	0.90	0.40	2.00	21.95	0.524	1241	145	155
9	3 C X 50	1.00	0.40	2.00	24.85	0.387	1700	170	190
10	3 C X 70	1.10	0.50	2.00	27.95	0.268	2255	210	235
11	3 C X 95	1.10	0.50	2.20	31.45	0.193	3034	250	290
12	3 C X 120	1.20	0.50	2.20	34.55	0.153	3801	285	330
13	3 C X 150	1.40	0.60	2.20	38.30	0.124	4702	315	375
14	3 C X 185	1.60	0.60	2.40	42.25	0.0991	5737	355	435
15	3 C X 240	1.70	0.70	2.60	47.05	0.0754	7271	410	510
16	3 C X 300	1.80	0.70	2.80	51.70	0.0601	9011	460	590

Standards : Conforms to IS 7098-1, BS 5467, IEC 60502-1, BS 7889

3.5 CORE COPPER XLPE ARMOURED POWER CABLES

An Armoured Cable is a type of cable covered in a metal sheath. Armoured cable is a cable with a metal protective covering to ensure electrical continuity of the safety ground. It is used to conduct power and used in applications where cables will be exposed to mechanical or environmental damage under normal operating conditions.



Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

Key Feature : ● High Mechanical Strength & Better Electrical Properties ● Excellent Conductor of Heat and Electricity ● High Magnetic Conductivity and Resist External Forces.
Conductor : Copper Stranded Wires Class 2
Insulation : XLPE-Cross Linked Polyethylene Compound
Inner Sheath : Polyvinyl Chloride (PVC)
Armouring : Single layer of GS Flat Strips
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application : It is most suitable for underground cabling such as in sewers or underground transport networks or outdoor walls via cable cleats. It is used in industrial applications like in cable trays and raceways. Many cities and municipalities allow the use of these cables in residential and commercial applications.

DESIGN PARAMETERS OF 3.5 CORE COPPER XLPE ARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of Insulation mm		Inner Sheath PVC Thickness mm	Armour Size mm (G.I) W X H	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm							Direct in Ground	In Air
1	3.5 X 25/16	0.9	0.7	0.30	4.0 X 0.80	1.4	23.1	0.727	1355	120	125
2	3.5 X 35/16	0.9	0.7	0.30	4.0 X 0.80	1.4	25.2	0.524	1650	145	155
3	3.5 X 50/25	1.0	0.9	0.30	4.0 X 0.80	1.4	27.9	0.387	2150	170	190
4	3.5 X 70/35	1.1	0.9	0.40	4.0 X 0.80	1.56	32.1	0.268	2850	210	235
5	3.5 X 95/50	1.1	1.0	0.40	4.0 X 0.80	1.56	35.9	0.193	3800	250	290
6	3.5 X 120/70	1.2	1.1	0.40	4.0 X 0.80	1.72	39.8	0.153	4750	285	330
7	3.5 X 150/70	1.4	1.1	0.50	4.0 X 0.80	1.88	44.0	0.124	5600	315	375
8	3.5 X 185/95	1.6	1.1	0.50	4.0 X 0.80	2.04	49.9	0.0991	7000	355	435
9	3.5 X 240/120	1.7	1.2	0.60	4.0 X 0.80	2.20	55.1	0.0754	8900	410	510
10	3.5 X 300/150	1.8	1.4	0.60	4.0 X 0.80	2.36	58.1	0.0601	11000	460	590

Standards : Conforms to IS 7098 (Part - 1)

3.5 CORE COPPER XLPE UNARMOURED POWER CABLES

An Unarmoured Cables have the characteristics of internal electricity and external insulation. It is easy to install and use. These cables work in both dry and moist conditions. They are highly flexible for application in different electrical environment. These control cables are used in tool machines, steel production units & electrical substations.

Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

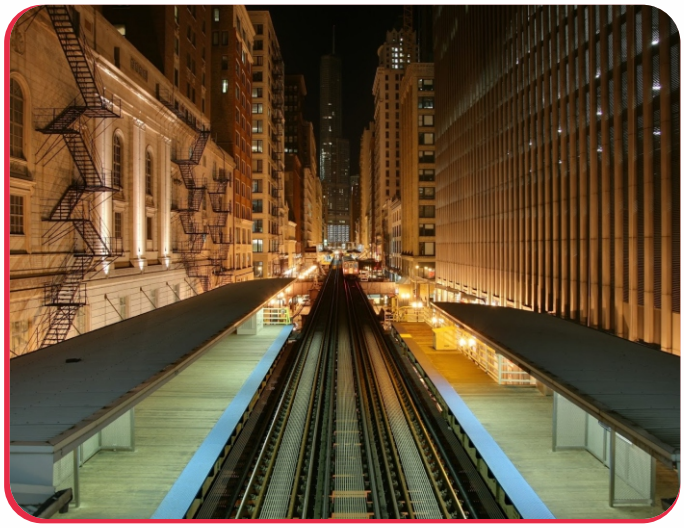
Key Feature : ● Better Electrical Properties ● Excellent Conductor of Heat and Electricity ● High Magnetic Conductivity and High Mechanical Strength ● Resist External Forces.
Conductor : Copper Stranded Wires Class 2
Insulation : XLPE-Cross Linked Polyethylene Compound
Inner Sheath : Polyvinyl Chloride (PVC)
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application : It is mainly used in power stations, industrial applications like in cable trays and raceways, industry and distribution boards as well as in subscriber networks where mechanical damages are not to be expected.

DESIGN PARAMETERS OF 3.5 CORE COPPER XLPE UNARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of XLPE Insulation mm		Inner Sheath PVC Thickness mm	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm						Direct in Ground	In Air
1	3.5 X 25/16	0.9	0.7	0.30	2.0	22.0	0.727	1125	120	125
2	3.5 X 35/16	0.9	0.7	0.30	2.0	24.0	0.524	1425	145	155
3	3.5 X 50/25	1.0	0.9	0.30	2.0	27.0	0.387	1980	170	190
4	3.5 X 70/35	1.1	0.9	0.40	2.2	31.0	0.268	2680	210	235
5	3.5 X 95/50	1.1	1.0	0.40	2.2	34.0	0.193	3580	250	290
6	3.5 X 120/70	1.2	1.1	0.40	2.2	38.0	0.153	4480	285	330
7	3.5 X 150/70	1.4	1.1	0.50	2.4	43.0	0.124	5485	315	375
8	3.5 X 185/95	1.6	1.1	0.50	2.6	46.0	0.0991	6785	355	435
9	3.5 X 240/120	1.7	1.2	0.60	2.8	52.0	0.0754	8675	410	510
10	3.5 X 300/150	1.8	1.4	0.60	3.0	57.0	0.0601	10780	460	590

Standards : Conforms to IS 7098 (Part – 1)

3.5 CORE ALUMINIUM XLPE ARMOURED POWER CABLES



An Armoured Cable is a type of cable covered in a metal sheath. Armoured cable is a cable with a metal protective covering to ensure electrical continuity of the safety ground. It is used to conduct power. Armoured cables are used in applications where cables will be exposed to mechanical or environmental damage under normal operating conditions.

This cable constitutes the best cable for transmission and distribution lines because of its excellent electrical and physical properties. The mutual capacitance of XLPE cables is also lower, thus reducing the charging currents and earth-leakage currents in networks without the rigid star-point earthing. The excellent resistance to thermal deformation and the excellent aging property of XLPE cable permit it to carry large current under normal (90°C) or short circuit (250°C) conditions. These cables can withstand smaller radius bending and is lighter in weight allowing for easy and reliable installation.

PRODUCT CONSTRUCTION :

Key Feature : ● Excellent Conductor of Heat and Electricity ● High Magnetic Conductivity and Resist External Forces ● High Mechanical Strength & Better Electrical Properties ● Light in Weight.

Conductor : Aluminium Stranded Wires Class - 2

Insulation : XLPE-Cross Linked Polyethylene Compound

Inner Sheath : Polyvinyl Chloride (PVC)

Armouring : Single Layer of GS Flat Strips

Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)

Application: It is used in industrial applications like in cable trays and raceways. Many cities and municipalities allow the use of these cables in residential and commercial applications. They are most suitable for underground cabling such as in sewers or underground transport networks or outdoor walls via cable cleats.

DESIGN PARAMETERS OF 3.5 CORE ALUMINIUM XLPE ARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of XLPE Insulation mm		Inner Sheath PVC Thickness mm	Armour Size mm (G.I) W X H	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm							Direct in Ground	In Air
1	3.5 X 25/16	0.9	0.7	0.30	4.0 X 0.80	1.40	22.1	1.20	800	95	99
2	3.5 X 35/16	0.9	0.7	0.30	4.0 X 0.80	1.40	24.2	0.868	1650	116	117
3	3.5 X 50/25	1.0	0.9	0.30	4.0 X 0.80	1.40	27.2	0.641	2150	140	140
4	3.5 X 70/35	1.1	0.9	0.40	4.0 X 0.80	1.56	31.1	0.443	2850	170	176
5	3.5 X 95/50	1.1	1.0	0.40	4.0 X 0.80	1.56	34.2	0.320	3800	200	221
6	3.5 X 120/70	1.2	1.1	0.50	4.0 X 0.80	1.72	38.4	0.253	4750	225	258
7	3.5 X 150/70	1.4	1.1	0.50	4.0 X 0.80	1.88	41.3	0.206	5600	255	294
8	3.5 X 185/95	1.6	1.1	0.50	4.0 X 0.80	2.04	46.5	0.164	7000	285	339
9	3.5 X 240/120	1.7	1.2	0.60	4.0 X 0.80	2.20	50.1	0.125	8900	325	402
10	3.5 X 300/150	1.8	1.4	0.60	4.0 X 0.80	2.36	55.3	0.100	11000	370	461

Standards : Conforms to IS 7098 (Part – 1)

3.5 CORE ALUMINIUM XLPE UNARMOURED POWER CABLES

3.5 Core Aluminium XLPE Unarmoured Cables have high dielectric strength & resistance to D.C. voltage effects, high mechanical strength & resistance to abrasion. WAACAB 3.5 core cable consist of total 3 wires of full size for three phases (R Y B) and fourth wire is half in the size for neutral. The Unarmoured cable is easy to install and use. The cable has the characteristics of internal electricity and external insulation.

These cables insulated conductors are laid up together filled with non- hygroscopic material compatible with the insulation. The filling may be omitted provided the outer shape of the cables remains practically circular and no adhesion occurs between cores and sheath. These cables are designated for general use including underground burial, where they are not likely to suffer mechanical damage.

PRODUCT CONSTRUCTION :

Key Feature : ● Light in Weight ● Resist External Forces ● High Temperature withstand Capacity ● High Mechanical Strength ● Better Electrical Properties.

Conductor : Aluminium Stranded Wires Class - 2

Insulation : XLPE-Cross Linked Polyethylene Compound

Inner Sheath : Polyvinyl Chloride (PVC)

Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)

Application : Power cables for energy supply are installed outdoors, underground, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks where mechanical damages are not to be expected.

DESIGN PARAMETERS OF 3.5 CORE ALUMINIUM XLPE UNARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of XLPE Insulation mm		Inner Sheath PVC Thickness mm	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm						Direct in Ground	In Air
1	3.5 X 25/16	0.9	0.7	0.30	2.0	21.2	1.20	600	95	99
2	3.5 X 35/16	0.9	0.7	0.30	2.0	24.1	0.868	700	116	117
3	3.5 X 50/25	1.0	0.9	0.30	2.0	26.2	0.641	900	140	140
4	3.5 X 70/35	1.1	0.9	0.40	2.2	30.1	0.443	1200	170	176
5	3.5 X 95/50	1.1	1.0	0.40	2.2	34.3	0.320	1500	200	221
6	3.5 X 120/70	1.2	1.1	0.40	2.2	37.1	0.253	1800	225	258
7	3.5 X 150/70	1.4	1.1	0.50	2.4	40.9	0.206	2250	255	294
8	3.5 X 185/95	1.6	1.1	0.50	2.6	46.3	0.164	2800	285	339
9	3.5 X 240/120	1.7	1.2	0.60	2.8	50.1	0.125	3550	325	402
10	3.5 X 300/150	1.8	1.4	0.60	3.0	55.2	0.100	4300	370	461

Standards : Conforms to IS 7098 (Part – 1)

3.5 CORE ALUMINIUM PVC ARMOURED POWER CABLES

3.5 Core Aluminum PVC Armoured Cables have high dielectric strength & resistance to D.C. voltage effects, high mechanical strength & resistance to abrasion. WAACAB 3.5 core cable consist total 3 wires of full size for three phases (R Y B) and fourth wire is half in the size for neutral. The current in neutral is generally low in a three-phase balanced system where load is mostly in three phases. In these types of cables a neutral wire has reduced cross section as compared to the 3-main conductors are use, which is used to carry the small amount of unbalanced currents. Single layer of GS flat strips are used , GS strips provide an external strength to the cable.

Aluminum oxide film which is always present on aluminum conductor surface acts as barrier and it protects the aluminum conductor from corrosion in fumes laden atmosphere. PVC has got fire retardant properties due to its halogen content. The fire in the cable gets extinguished immediately on removal of the fire source.

PRODUCT CONSTRUCTION :

Key Feature : ● High Mechanical Strength & Better Electrical Properties ● Better Magnetic Conductivity ● Resist External Forces ● High Temperature Withstand Capacity.

Conductor : Aluminium Stranded Wires Class - 2

Insulation : Polyvinyl Chloride (PVC)

Inner Sheath : Polyvinyl Chloride (PVC)

Armouring : Single Layer of GS Flat Strips

Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)

Application : These cables are used in outdoor & indoor applications, underground, in cable ducts, power stations, industry and distribution boards as well as in subscriber networks.

DESIGN PARAMETERS OF 3.5 CORE ALUMINIUM PVC ARMOURED POWER CABLE

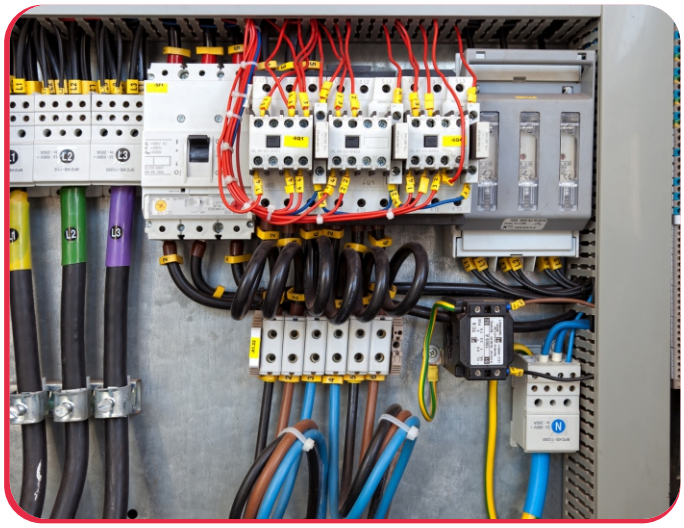
Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of Insulation mm		Inner Sheath PVC Thickness mm	Armour Size mm (G.I) W X H	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm							Direct in Ground	In Air
1	3.5 X 25/16	1.2	1.0	0.30	4.0 X 0.80	1.40	24.0	1.20	950	76	70
2	3.5 X 35/16	1.2	1.0	0.30	4.0 X 0.80	1.40	26.0	0.868	1091	92	86
3	3.5 X 50/25	1.4	1.2	0.30	4.0 X 0.80	1.56	30.0	0.641	1417	100	105
4	3.5 X 70/35	1.4	1.2	0.40	4.0 X 0.80	1.56	34.0	0.443	1755	135	130
5	3.5 X 95/50	1.6	1.4	0.40	4.0 X 0.80	1.72	37.5	0.320	2192	165	155
6	3.5 X 120/70	1.6	1.4	0.50	4.0 X 0.80	1.88	41.0	0.253	2619	185	180
7	3.5 X 150/70	1.8	1.4	0.50	4.0 X 0.80	1.88	45.5	0.206	3100	210	205
8	3.5 X 185/95	2.0	1.6	0.50	4.0 X 0.80	2.04	49.0	0.164	3745	235	240
9	3.5 X 240/120	2.2	1.6	0.60	4.0 X 0.80	2.36	56.0	0.125	4649	275	280
10	3.5 X 300/150	2.4	1.8	0.60	4.0 X 0.80	2.52	62.0	0.100	5625	305	315

Standards : Conforms to IS 1554 (Part – 1)

3.5 CORE ALUMINIUM PVC UNARMOURED POWER CABLES

Aluminum 3.5 Core PVC Unarmoured Cable consist total 3 conductor for three phases & fourth conductor is half the size for neutral. The current in neutral conductor is generally low in a three-phase balanced system, where load is mostly on three phases. These cables have high tensile strength and accurate resistance to high temperatures. These cables work in both dry and moist conditions. They are highly flexible for application in different electrical environments. These control cables are used in tool machines, steel production units & electrical substations, etc.

In the modern Power, Chemical, Fertilizer and Cement Plants many PVC cables are bunched in the cable shaft or on cable trays. In case of fire in these cables, the fire becomes self-sustaining. Moreover, due to the burning of PVC a dense corrosive smoke is emitted which makes firefighting very difficult, due to poor visibility and toxic nature of the smoke. PVC compound apart from meeting the requirements of Type ST2 has got better fire-retardant properties.



PRODUCT CONSTRUCTION :

Key Feature : ● Light in Weight ● Resist External Forces ● High Temperature Withstand Capacity ● High Mechanical Strength ● Better Electrical Properties.

Conductor : Aluminium Stranded Wires Class - 2

Insulation : Polyvinyl Chloride (PVC)

Inner Sheath : Polyvinyl Chloride (PVC)

Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)

Application : Power cables for energy supply are installed outdoors, in underground, in water, indoors, in cable ducts, power stations, for industry and distribution boards as well as in subscriber networks, where mechanical damages are not to be expected.

DESIGN PARAMETERS OF 3.5 CORE ALUMINIUM PVC UNARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Thickness of Insulation mm		Inner Sheath PVC Thickness mm	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
		Power Core mm	Neutral Core mm						Direct in Ground	In Air
1	3.5 X 25/16	1.2	1.0	0.30	2.0	24.0	1.20	639	76	70
2	3.5 X 35/16	1.2	1.0	0.30	2.0	26.0	0.868	757	92	86
3	3.5 X 50/25	1.4	1.2	0.30	2.0	30.0	0.641	986	100	105
4	3.5 X 70/35	1.4	1.2	0.40	2.2	34.0	0.443	1305	135	130
5	3.5 X 95/50	1.6	1.4	0.40	2.2	37.5	0.320	1695	165	155
6	3.5 X 120/70	1.6	1.4	0.50	2.4	41.0	0.253	2079	185	180
7	3.5 X 150/70	1.8	1.4	0.50	2.4	45.5	0.206	2455	210	205
8	3.5 X 185/95	2.0	1.6	0.50	2.6	49.0	0.164	3026	235	240
9	3.5 X 240/120	2.2	1.6	0.60	3.0	56.0	0.125	3916	275	280
10	3.5 X 300/150	2.4	1.8	0.60	3.2	62.0	0.100	4805	305	315

Standards : Conforms to IS 1554 (Part – 1)

4 CORE COPPER PVC ARMOURED POWER CABLES

4 Core Copper PVC Armoured Cables are a power and auxiliary control cables, designed to use mainly in supply of electricity. A multicore cable as the name suggests is one where there are a number of different cores. When cable has only one core Aluminium Wire Armour (AWA) is used instead of steel wire. This is because the aluminium is non-magnetic. A magnetic field is produced by the current in a single core cable. This would induce an electric current in the steel wire, which could cause overheating.

Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

Key Feature : ● Resist External Forces ● High Mechanical Strength ● Better Electrical Properties ● High Magnetic Conductivity ● Good Magnetic Shielding Effect.
Conductor : Copper Solid or Stranded Wires Class 1 or 2
Insulation : Polyvinyl Chloride (PVC)
Inner Sheath : Polyvinyl Chloride (PVC)
Armouring : Single Layer of GS Flat Strips
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application : It is used mainly in supply of electricity. It is used for underground systems, cable networks, power networks, outdoor & indoor applications and cable ducting.

DESIGN PARAMETERS OF 4 CORE COPPER PVC ARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Insulation PVC Thickness mm	Inner Sheath PVC Thickness mm	Armour Size mm (G.I) W X H	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
									Direct in Ground	In Air
1	4 C X 1.5	0.80	0.30	1.40	1.24	14.10	12.10	446	21	17
2	4 C X 2.5	0.90	0.30	1.40	1.24	15.40	7.41	544	27	24
3	4 C X 4	1.0	0.30	1.40	1.40	18.15	4.61	750	36	30
4	4 C X 6	1.0	0.30	1.40	1.40	18.20	3.08	778	45	39
5	4 C X 10	1.0	0.30	4.0 X 0.80	1.40	20.55	1.83	1041	60	52
6	4 C X 16	1.0	0.30	4.0 X 0.80	1.40	23.20	1.15	1398	77	66
7	4 C X 25	1.2	0.30	4.0 X 0.80	1.40	25.65	0.727	1690	99	90
8	4 C X 35	1.2	0.30	4.0 X 0.80	1.56	28.55	0.524	2168	120	110
9	4 C X 50	1.4	0.40	4.0 X 0.80	1.56	32.70	0.387	2904	145	135
10	4 C X 70	1.4	0.40	4.0 X 0.80	1.56	36.15	0.268	3698	175	165
11	4 C X 95	1.6	0.40	4.0 X 0.80	1.72	41.45	0.193	4913	210	200
12	4 C X 120	1.6	0.50	4.0 X 0.80	1.88	45.20	0.153	6030	240	230
13	4 C X 150	1.8	0.50	4.0 X 0.80	2.04	49.95	0.124	7370	270	265
14	4 C X 185	2.0	0.60	4.0 X 0.80	2.20	55.10	0.0991	8916	300	305
15	4 C X 240	2.2	0.60	4.0 X 0.80	2.36	61.20	0.0754	11137	345	355
16	4 C X 300	2.4	0.70	4.0 X 0.80	2.52	67.70	0.0601	13715	385	400

Standards : Conforms to IS 1554 (Part – 1)

4 CORE COPPER PVC UNARMOURED POWER CABLES

4 Core Copper PVC Unarmoured Cables have high tensile strength and accurate resistance to high temperatures. These cables work in both dry and moist conditions. They are highly flexible for application in different electrical environments. These control cables are used in tool machines, steel production units, electrical substations, power plants etc.

Technical Data

Operating Temp: -20°C to max.+90°C
Nominal Voltage: 1100 V
Test Voltage: 3000 V
Insulation Resistance: Min. 10 MΩ x km
Min. Bending Radius: Single Core: 15 x Overall Diameter
Multi Core: 12 x Overall Diameter

PRODUCT CONSTRUCTION :

Key Feature : ● Resist External Forces ● High Temperature with Stand Capacity ● High Mechanical Strength ● Better Electrical Properties
Conductor : Copper Solid or Stranded Wires Class 1 or 2
Insulation : Polyvinyl Chloride (PVC)
Inner Sheath : Polyvinyl Chloride (PVC)
Outer Sheath : PVC TYPE ST-2 (Option : FR Type / FRLS Type)
Application : These cables are used in indoor application, in cable duct, power station & industries.

DESIGN PARAMETERS OF 4 CORE COPPER PVC UNARMOURED POWER CABLE

Sr. No.	No. of cores & cros sectional Area/Neutral Core (Sq. mm.)	Insulation PVC Thickness mm	Inner Sheath PVC Thickness mm	Outer Sheath PVC Thickness mm	Approx Outer Sheath O/D mm	Max. Dc Conductor Resistance At 20° C (Ohm/Km)	Approx Weight KG/km	Current Ratings (Amp.)	
								Direct in Ground	In Air
1	4 C X 1.5	0.80	0.30	1.80	12.60	12.10	245	21	17
2	4 C X 2.5	0.90	0.30	1.80	13.70	7.41	313	27	24
3	4 C X 4	1.0	0.30	1.80	16.20	4.61	443	36	30
4	4 C X 6	1.0	0.30	1.80	17.50	3.08	537	45	39
5	4 C X 10	1.0	0.30	2.00	20.30	1.83	788	60	52
6	4 C X 16	1.0	0.30	2.00	22.85	1.15	1090	77	66
7	4 C X 25	1.2	0.30	2.00	25.40	0.727	1361	99	90
8	4 C X 35	1.2	0.30	2.00	27.80	0.524	1770	120	110
9	4 C X 50	1.4	0.30	2.20	32.35	0.387	2469	145	135
10	4 C X 70	1.4	0.40	2.20	35.90	0.268	3211	175	165
11	4 C X 95	1.6	0.40	2.40	41.30	0.193	4358	210	200
12	4 C X 120	1.6	0.50	2.40	44.60	0.153	5382	240	230
13	4 C X 150	1.8	0.50	2.60	49.60	0.124	6656	270	265
14	4 C X 185	2.0	0.60	2.80	54.60	0.0991	8140	300	305
15	4 C X 240	2.2	0.60	3.00	60.80	0.0754	10270	345	355
16	4 C X 300	2.4	0.70	3.40	67.80	0.0601	12835	385	400

Standards : Conforms to IS 1554 (Part – 1)

WELDING CABLES

Welding Cables are the electrical conductor for the welding current. It is designed to carry high currents under rough usage conditions. It is used in electric arc-welding machines to power an electrode a specially designed metal rod that conducts a charge. The charge carried by the electrode is needed to produce an electric arc, the heat source between the electrode and the metals or other materials being welded. It is ultra high-performance flexible welding lead, also better retardant properties, outstanding toughness & durability, high resistance to cuts tears & abrasion.

Welding cables are suitable to provide the connection between the welding apparatus and the welding tool used in manual and automatic applications found on construction sites, and in welding robots on assembly lines used by the shipbuilding and automotive industries. Arc-welding requires a person to move the electrode around the shop and along the joints being welded, so it is essential to have a flexible welding cable that allows for ease of movement.

PRODUCT CONSTRUCTION :

Key Feature : ● Excellent Ozone and Weather Resistant ● Excellent Flexibility to Last Longer in Flex Applications ● Resistance to Oil, Solvents and Chemicals ● Better Flame Retardant Properties.

Conductor : Bare Annealed Flexible Copper Conductor, Class 5 and Class 6

Insulation : NBR Double Insulated Flexible Nitrile Rubber

Application : The Welding Cable is specially designed for the transmission of high currents from the electric welding machine to the welding tool. It is suitable for flexible use under rugged conditions, on assembly lines and conveyor systems, in machine tool and motor car manufacturing, shipbuilding and for welding machines.

Current Rating : Based on an ambient air temp. of 25°C and a maximum conductor temp. of 90°C. The percentage duty cycles for various processes and applications are as below:

Automobile Welding : Up to 100%, **Semi-automatic Welding :** 30% to 85%,

Manual Welding : 0% to 60%, **Very Intermittent & Occasional Welding :** Up to 20%

DESIGN PARAMETERS OF WELDING CABLE

Sr. No.	Size (mm)	No./Dia. (mm)	Insulation Thickness (mm)	Sheath Thickness (mm)	Outer Dia. Appx.	Conductor resistance At 20C° C (Ohm/Km)	Current Rating (Amp.) Welding Application					Current Rating (Amps.) Welding Application
							Duty Cycle					
							100%	85%	60%	30%	20%	
1	10	322/0.20	1.2	1.8	10.1	1.910	105	115	135	190	235	110
2	16	511/0.20	1.2	1.9	11.6	1.210	135	145	175	245	302	138
3	25	798/0.20	1.4	2.0	13.1	0.780	180	195	230	330	402	187
4	35	1121/0.20	1.4	2.2	14.6	0.554	225	245	290	410	503	233
5	50	1596/0.20	1.6	2.4	17.2	0.386	285	310	370	520	637	295
6	70	2220/0.20	1.6	2.6	19.1	0.272	355	385	460	650	794	372
7	95	1349/0.30	1.8	2.8	21.6	0.206	430	470	560	790	960	449
8	120	608/0.50	1.8	3.0	24.2	0.161	500	540	650	910	1117	523
9	150	760/0.50	2.0	3.2	26.1	0.129	580	620	740	1040	1296	608
10	185	943/0.50	2.2	3.4	29.1	0.106	660	715	850	1200	1474	690
11	240	1225/0.50	2.4	3.5	32.1	0.0801	710	770	916	1296	1587	744

Standards : Conforms to CENELEC HD 22-6 31, VDE 0282, IEC 245-6, BS 6899, IS 6830/84

INSTRUMENTATION & SHIELDED CABLES

Instrumentation Cable are multiple conductor cables that convey low energy electrical signals used for monitoring or controlling electrical power systems and their associated processes. The functions of measurement and control are vital in manufacturing and processing applications.

A Shielded Cable or screened cable is an electrical cable of one or more insulated conductors enclosed by a common conductive layer. The shield may be composed of braided strands of copper (or other metal such as aluminium) & a non-braided spiral winding of copper tape or a layer of conducting polymer. Usually this shield is covered with a jacket.

Instrumentation Cables are designed for signal integrity. Conductors used in the cable maintain high system accuracy and sensitivity. Maximum rejection of electromagnetic noise is achieved by twisting the insulated conductors. It is used for monitoring or controlling electrical power systems and their associated processes, industrial process manufacturing plant for control, communication, data (analog/digital) and voice transmission signals, industrial signalling and process control circuit required typically in process industries etc.

PRODUCT CONSTRUCTION :

Key Feature : ● Reduces Electrical Noise and Reduces its Impact on Signals ● Lowers Electromagnetic Radiation ● Better Mechanical Strength.

Conductor : Bare Annealed Copper Conductor

Insulation : FR+HR PVC Compound with a High Insulation Resistance Value

Tapping : Aluminium Myles Tape. In case of multi pairs wrapped with Aluminum Mylar Tape along with annealed tinned drain wire.

Outer Sheath : PVC Material Type ST – 1 & HR, FR & FRLS Sheathing can be provided as per requirement.

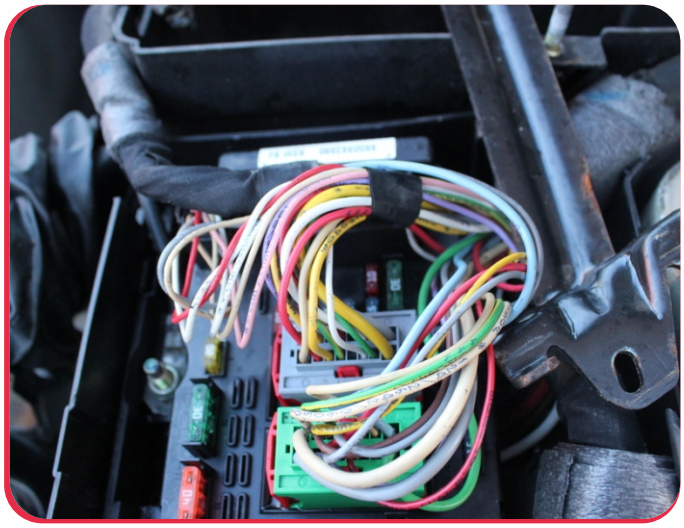
Application : This Cables are used in interconnection of electrical measuring instrument panel, control in machine tool manufacturing in plant engineering, in security systems provides some protection from power frequency and radio frequency interference for reducing the number of false alarms being generated.

DESIGN PARAMETERS OF INSTRUMENTATION & SHIELDED CABLE

SR. NO.	Size (Sq. mm)	No./Max. dia of strands (mm)	Approximate overall diameter of cable (mm)												
			2 Core	3 Core	4 Core	5 Core	6 Core	7 Core	8 Core	10 Core	12 Core	14 Core	16 Core	19 Core	24 Core
1	0.50	16/0.20	6.20	6.60	7.20	8.30	8.50	8.50	9.30	10.80	11.20	12	12.60	13.20	15.60
2	0.75	24/0.20	6.80	7.20	7.90	9.10	9.50	9.50	10.40	12.20	12.60	13.30	14.20	14.90	17.60
3	1.00	32/0.20	7.00	7.50	8.10	9.60	9.80	9.80	10.70	12.60	13.00	13.70	14.60	15.60	18.20
4	1.50	30/0.25	7.60	8.10	9.00	10.30	10.70	10.70	11.90	13.80	14.30	15.20	16.00	17.10	20.20
5	2.50	50/0.25	9.00	9.60	10.50	11.70	12.70	12.70	14.10	16.60	17.20	18.10	19.30	20.30	23.80
6	4.00	56/0.30	10.60	11.30	12.40	13.95	15.30	15.30	16.90	20.00	20.70	21.80	23.20	24.50	28.80

Standards : Conforms to IS : 694

AUTO CABLES



Auto Cables are used for low-tension electrical wiring in automobiles, motorcycles and other motor vehicles in applications including starting, charging, lighting, signaling and in instrument panel circuits. This range of automotive thin wall cables are flexible and flame retardant.

Auto cables are abrasion resistant and therefore less prone to damage, which in turn leads to less chances of a short circuit resulting in fire in the vehicle. Manufactured from electrolytic grade, bright annealed, bare copper conductors and hence can carry the rated current without overheating. These are insulated with a special grade PVC compound that is formulated and manufactured in-house to the highest safety standards. These cables can safely operate under extreme temperatures. Auto cables are impervious to water, petrol, diesel, acids, engine and lubricating oils and grease resistant, high mechanical strength & provides higher reliability in heat resistance than conventional general wires due to emission bridging. These cables are used as original equipment's for wiring automobiles and in the auto harnesses, engine compartments where higher heat resistance is required, high temperature required.

PRODUCT CONSTRUCTION :

Key Feature : ● Heat Resistant and Weather Resistant ● Moisture and Grease Resistant ● Excellent Flexibility ● Impervious to Water, Petrol, Diesel, Acids, Engine and Lubricating Oils.

Conductor : Electrolytic Grade, Bright Annealed, Bunched, Bare Copper Conductors

Insulation : PVC Insulation Compound

Application : Auto cables are mainly used for making wiring harness which is used in automobile like two wheelers, three wheelers, four wheelers and heavy vehicles etc.

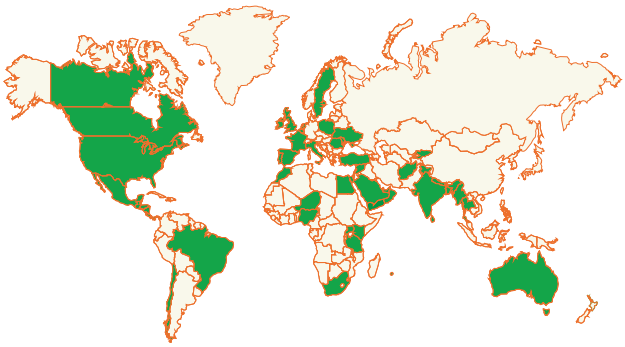
DESIGN PARAMETERS OF AUTO CABLE

Sr. No.	Size Sq.mm	No. & Size of Wires mm	Insulation thickness mm	0verall diameter mm	Max conductor resistance at 20°C (Ohm/Km)	Current rating Amps.
1	0.50	16/0.20	0.6	2.3	39	4
2	0.75	24/0.20	0.6	2.6	26	7
3	1.00	32/0.20	0.7	2.9	19.5	11
4	1.50	30/0.25	0.7	3.3	13.3	14
5	2.50	50/0.25	0.7	3.8	7.98	19
6	4.00	56/0.30	0.8	4.5	4.95	26
7	6.00	84/0.30	0.8	5.2	3.30	31
8	10.00	140/0.30	1.0	7.0	1.91	42

Standards : Conforms to IS : 2465

LOCATED PAN INDIA

GLOBAL REPUTATION



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