



# WIRES YOU CAN TRUST, QUALITY YOU CAN COUNT ON

**STRONG WIRES. STRONGER BONDS.**





# NABL

Natraj Industries has set a benchmark in product quality by achieving NABL (National Accreditation Board for Testing and Calibration Laboratories) accreditation, showcasing its capability to conduct international-level quality evaluations for wires and cables. Additionally, the company has a DSIR-recognized technology center within its cable division, reinforcing its commitment to innovation and excellence. NABL, an autonomous body under the Department of Science and Industrial Research (Government of India), oversees this accreditation.

As the first private facility of its kind in India, the NABL-accredited laboratory is fully equipped to meet international standards for testing a wide range of cables, up to 220 KV grade, PVC cables, flexible cables and fire survival cables. The lab adheres to Indian Standards. It also conducts eight types of fire tests to evaluate and demonstrate the fire-retardant behavior of cables.



# ABOUT THE COMPANY

## NATRAJ INDUSTRIES

Natraj Industries, a distinguished name in the cable manufacturing industry, is one of the oldest and most renowned manufacturers of electric wires, coaxial cables, submersible cables, XLPE insulated cables, and flexible cables in India.

Established in 1978 by its visionary founder, Shri Sudhir Kumar, the company has grown from humble beginnings to become a leader in its field. Shri Kumar's foresight, unwavering determination, and dedication, combined with the expertise of his professional team, state-of-the-art infrastructure, robust marketing network, and a commitment to customer satisfaction, have been the driving forces behind Natraj Industries' success. His focus on delivering consistent quality and economical solutions has elevated the business to remarkable heights.

As Natraj Industries approaches its Golden Jubilee, completing 47 illustrious years in the industry, it takes immense pride in having illuminated countless homes and establishments across the nation.

The company's flagship brands, Magdolin and Polostar, have become synonymous with quality and reliability, earning the trust and confidence of customers nationwide. Through its commitment to excellence, Natraj Industries continues to contribute significantly to India's growth and development.



# CERTIFICATION

*Certificate of Registration*

This is to Certify that  
Quality Management System of

**NATRAJ INDUSTRIES**  
A-0, 1ST AND 2ND FLOOR, JHILMIL INDUSTRIAL AREA,  
DELHI - 110095, INDIA

has been assessed and found to conform to the requirements of  
**ISO 9001:2015**  
for the following scope :

MANUFACTURER AND SUPPLIER OF MULTI CORE FLEXIBLE ROUND CABLES, SUBMERSIBLE CABLES, LLLCTRONIC CABLES, COMPUTER AND INTERNET DATA CABLES, CO-AXIAL CABLE, CCTV CABLES, CAMERA CABLES, TELEPHONE CABLES, FLEXIBLE WIRE, MULTI STRAND WIRE, ALUMINIUM AND COPPER SINGLE CORE, ALUMINIUM TWIN CORE, ALUMINIUM THREE CORE, ALUMINIUM FOUR CORE, TWIN FLAT CABLES

Certificate No **23EQKJ25**  
Initial Registration Date 03/04/2023 Issuance Date 03/04/2023  
Date of Expiry 02/04/2026  
1st Surve Due 03/03/2024 2nd Surve Due 03/03/2025

  
**Magnitude Management Services Pvt. Ltd.**  
B-55, Lower Ground Floor, Sector 02, Noida-201301, U.P, India  
www.mmscertification.com, website: www.mmscertification.com  
\* Subject to successful surveillance audits and case surveillance audits is not allowed to be conducted, this certificate shall be suspended/withdrawn  
Certificate Application: Please do not the validity of certificate as long from www.mmscertification.com or contact us on 011-26108222  
Certificate is the property of Magnitude Management Services Pvt. Ltd. and shall be used only for the purpose mentioned above.

  
**Director**

 **केन्द्रीय विद्युत अनुसंधान संस्थान**  
(भारत सरकार की सहायता, विद्युत मंत्रालय)  
क्षेत्रीय परीक्षण प्रयोगशाला  
3 ए. इन्स्टीटयुशनल एरिया, सेक्टर 62, नोएडा-201309 (उ.प्र.)  
**CENTRAL POWER RESEARCH INSTITUTE**  
(A Government of India Institute, Ministry of Power)  
REGIONAL TESTING LABORATORY  
3.A, Institutional Area Sector - 62, Noida - 201309 (U.P.)  
बैंगलूरु / वेबसाइट: <http://cpri.res.in>

संलग्न प्रमाणिका (Ref) **1c24** दिनांक (Date) **07.03.2023**

किसी को,  
M/s. Natraj Industries,  
A-0, 1<sup>st</sup> and 2<sup>nd</sup> floor,  
Jhilmil Industrial Area, Delhi-110095

विषय (Subj) परीक्षण दस्तावेज़ (Test document) **CPRINOCAB21T0019**  
भतीयों (Dear sirs),

हमारी प्रयोगशाला में 13.01.2023 से 07.03.2023 के बीच आपके **एल टी कोबिल** पर सार्वजनिक परीक्षण के संदर्भ में निम्नलिखित प्रस्तावक संलग्न है।

Please find enclosed the following documents in respect of the test(s) conducted on **LT cable** during 13.01.2023 to 07.03.2023 at our laboratory.

विषय में अस्पष्टताएँ यदि हो तो इस विषय के जारी होने की तारीख से 45 दिन के अंदर विहित रूप में हमारे स्थान में हमारी जांच लम्बे आवश्यक सहायता किया और इसके विषय में रिपोर्ट की सभी मूल प्रतियाँ लौटाए जायें। कृपया नोट करें कि इस तारीख के बाद प्राप्त अनुरोधों पर कोई कार्यवाई नहीं की जाएगी।

Any discrepancies in the report must be brought to our notice in writing within 45 days of the date of issue of this report for effecting necessary corrections for which all the original copies of the reports must be returned. Please note that request received beyond this date will not be entertained.

दस्तावेज़ों की प्रतियाँ की फायली में हैं।  
Please acknowledge receipt of the documents.

कृतज्ञता / Thanking you

भवदीय / Yours sincerely  
  
इकाई प्रमुख / Unit Head

संलग्न : उपरोक्त  
Encl. : As above

रक्षित एवं संप्रति में कर्ज बर्गों  
कोई जीवन है उसका संरक्षण करें।

SAVE ENERGY FOR BENEFIT OF SELF AND NATION  
ENERGY IS LIFE CONSERVE IT

  
**Certificate of Compliance**

This is to Certify that

**NATRAJ INDUSTRIES**  
A-0, 1ST AND 2ND FLOOR, JHILMIL INDUSTRIAL AREA,  
DELHI-110095, INDIA

FOR THE PRODUCT :

MANUFACTURER AND SUPPLIER OF MULTI CORE FLEXIBLE ROUND CABLES, SUBMERSIBLE CABLES, ELECTRONIC CABLES, COMPUTER AND INTERNET DATA CABLES, CO-AXIAL CABLE, CCTV CABLES, CAMERA CABLES, TELEPHONE CABLES, FLEXIBLE WIRE, MULTISTRAND WIRE, ALUMINIUM AND COPPER SINGLE CORE, ALUMINIUM TWIN CORE, ALUMINIUM THREE CORE, ALUMINIUM FOUR CORE, TWIN FLAT CABLES.

**RoHS Directive(2011/65/EU)**  
(Restriction of use of certain Hazardous Substance)

RoHS Directive (2011/65/EU) of the European Parliament and the Council on the Restriction of use of certain Hazardous Substance in Electrical and Electronic Equipments.

Statement: This Certificate Declares that the Product type/model described above complies with the mentioned above European Standards.

Remarks: This certificate of compliance is based on the evaluation of a sample of the above products. It does not imply and assessment of the mass production of the product. This certificate holder may use this certificate in connection with the Test Report. The Certification Body should be informed (invasion of technical file) for any modification or alterations made to the aforementioned product type (including design and manufacture and/or extension to the existing scope of application).

Certificate No : **23/R/NA10403** Issuance Date : **03/04/2023**  
Initial Registration Date : **03/04/2023** Date of Expiry : **02/04/2026**

  
Auth. Signatory

 **RoHS compliant**

 **TCS-UK**

**Times Certification Services UK Ltd.**  
Regd Office : 71-75 Shelton Street, Covent Garden, London, WC2H 9JQ, United Kingdom  
This certificate is the intellectual Property of Times Certification Services UK Ltd. and can be maintained through surveillance audits and renewal audits. Certificate shall be withdrawn immediately on request in case of non-compliance with certification Procedures.  
Validity of this certificate can be verified at: [www.TIMESCERTUK.COM](http://www.TIMESCERTUK.COM) or via email at [info@TIMESCERTUK.COM](mailto:info@TIMESCERTUK.COM)



  
**Certificate of Compliance**

We hereby declare that the product complied with the requirement of  
**Low Voltage Directive (2014/35/EU)**

**Manufacturer**

Name : **NATRAJ INDUSTRIES**  
Address : **A-0, 1ST AND 2ND FLOOR, JHILMIL INDUSTRIAL AREA,  
DF&HI -110095, INDIA**

Products : MANUFACTURER AND SUPPLIER OF MULTI CORE FLEXIBLE ROUND CABLES, SUBMERSIBLE CABLES, ELECTRONIC CABLES, COMPUTER AND INTERNET DATA CABLES, CO-AXIAL CABLE, CCTV CABLES, CAMERA CABLES, TELEPHONE CABLES, FLEXIBLE WIRE, MULTISTRAND WIRE, ALUMINIUM AND COPPER SINGLE CORE, ALUMINIUM TWIN CORE, ALUMINIUM THREE CORE, ALUMINIUM FOUR CORE, TWIN FLAT CABLES.

The Certification body has performed an audit of the above product covering the design, manufacture and final inspection of the certified product. The technical documentation / inspection / test results comply with the requirements of **Low Voltage Directive (2014/35/EU)**

Hence the manufacturer has issued a Declaration of Conformity according and places the CE marking with his own responsibility.

Certificate No : **23/CE/NA10403** Issuance Date : **03/04/2023**  
Initial Registration Date : **03/04/2023** Date of Expiry\* : **02/04/2026**

  
Auth. Signatory

 **CE**

 **TCS-UK**

**Times Certification Services UK Ltd.**  
Regd Office : 71-75 Shelton Street, Covent Garden, London, WC2H 9JQ, United Kingdom



# SINGLE CORE FR PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) FLEXIBLE CABLES, 1100 VOLT

Nominal cross-sectional area of conductor	Number/ Maximum Diameter of conductor of strands	Nominal Thickness of Insulation	Approx. overall Diameter	Current carrying capacity 2 cables single Phase		Maximum Conductor Resistance per kilometer 20 C
				Conduit/ Trunking	Unenclosed clipped directly to a surface or on cable trays	
(Sq.mm)	(mm)	(mm)	(mm)	A	A	(Ω Ohm)
0.5 sq. mm	16 N/0.2 mm	0.6mm	2.1mm	5 A	5 A	39.00 Ω (Ohm)
0.75 sq. mm	24 N/0.2 mm	0.6mm	2.3mm	9 A	9 A	26.00 Ω (Ohm)
1.0 sq. mm**	14 N/0.3 mm	0.7mm	2.7mm	15 A	16 A	18.10 Ω (Ohm)
1.5 sq. mm**	22 N/0.3 mm	0.7mm	3.0mm	19 A	21A	12.10 Ω (Ohm)
2.5 sq. mm**	36 N/0.3 mm	0.8mm	3.6mm	25 A	28 A	7.41 Ω (Ohm)
4.0 sq. mm	56 N/0.3 mm	0.8mm	4.1mm	32 A	35 A	4.95 Ω (Ohm)
6.0 sq. mm	84 N/0.3 mm	0.8mm	4.6mm	43 A	47 A	3.3 Ω (Ohm)

**NOTE: AVAILABLE IN 90 METER LENGTH IN CARTON PACKAGING**

...Fill the colour code i.e. B = Blue ... / K = Black ... etc...

\*\*Conductor Shall be class-II for 1.0 sq. mm, 1.5 sq. mm & 2.5 sq. mm & for other sizes shall be of class V as per IS 8130.

\*The number and diameter of conductor strands are for reference only. Conductor resistance as per IS 8130 is the governing criteria.

### CONSTRUCTION:

**Conductor:** Plain annealed copper conductor as per IS 8130

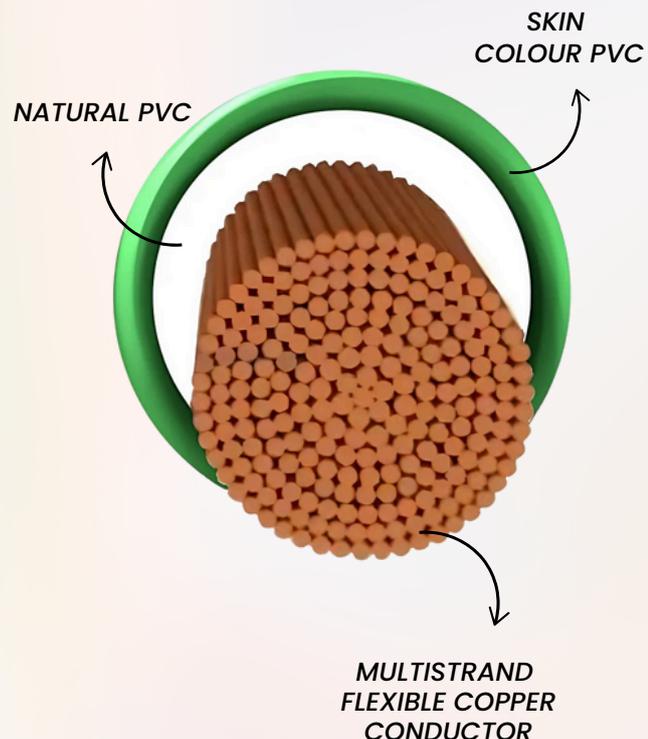
**Insulation:** Primary - Natural FR PVC

**Secondary:** Skin colour coated FR PVC

**Colour:** Red/Yellow/Blue/Black/Green.

(Any other colour on specific request can also be supplied)

**NOTE: PROJECT PACKING IN 180 METER IS ALSO AVAILABLE**



# SINGLE CORE FR PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) FLEXIBLE CABLES, 1100 VOLT

Nominal Cross Sectional area of conductor	Number/Maximum diameter of conductor strands	Nominal thickness of Insulation	Approx. overall diameter	Current carrying capacity 2 cables single phase	Maximum conductor resistance per km at 20 C
				Unenclosed clipped directly to a surface or on cable trays	
(Sq.mm)	(mm)	(mm)	(mm)	A	(Ω ohm)
10 sq mm	80 N/0.4 mm	1.0 mm	6.1 mm	59 A	1.91 Ω Ohm
16 sq. mm	126 N/ 0.4 mm	1.0 mm	7.0 mm	79 A	1.21 Ω Ohm
25 sq mm	196 N/ 0.4 mm	1.2 mm	8.6mm	93 A	0.780 Ω Ohm
35 sq mm	276 N/ 0.4 mm	1.2 mm	9.7mm	113 A	0.554 Ω Ohm
50 sq mm	396 N/ 0.4 mm	1.4 mm	11.5mm	153 A	0.386 Ω Ohm
70 sq mm	360 N/0.5 mm	1.4 mm	13.0mm	238 A	0.272 Ω Ohm
95 sq mm	475 N/ 0.5 mm	1.6 mm	15.1mm	289 A	0.206 Ω Ohm
120 sq mm	608 N/ 0.5 mm	1.6mm	16.6mm	339 A	0.161 Ω Ohm
150 sq mm	750 N/ 0.5 mm	1.8mm	18.5mm	394 A	0.129 Ω Ohm
185 sq mm	925 N/ 0.5 mm	2.0mm	20.4mm	461 A	0.106 Ω Ohm

**NOTE: CONDUCTOR AS PER CLASS V OF IS 8130 CONFIRMING TO IS 694  
100 METER IN POLYWRAP PACKING & IN BIGGER PACKING ON REQUEST**

...Fill the colour code i.e. B = Blue ... B ... / K = Black ...K... etc...

\*The number and diameter of conductor strands are for reference only. Conductor resistance as per IS 8130 is the governing criteria. Progressive sequential length marking on every meter.

**CONSTRUCTION:**

**Conductor :** Plain annealed copper conductor as per IS 8130

**Insulation :** Primary - Natural FR PVC

**Secondary :** Skin Colour Coated FR PVC

(Any other colour on specific request can also be supplied)

**NOTE :**

- 70 sq. mm and above are available in wooden drums.
- Colour : Red/Yellow/Blue/Black/Green.
- Single core PVC insulated Stranded Copper Conductor available on request.
- FRLSH and ZHFR is also available on request.



Specifications given here are subject to change to satisfy requirements. The number of wires is approximate and wire diameter is nominal; they shall be such as to satisfy the requirements of conductor resistance.



## FR-LSH (Flame Retardant Low Smoke and Halogen)

FRLSH cables were designed with safety in mind, especially for commercial buildings with limited exits and ventilation, like cinema halls. In the unfortunate event of a fire, many people suffer due to suffocation and low visibility caused by thick black smoke and toxic gases released when regular PVC burns. To address this, FRLSH insulation was developed to significantly reduce smoke and harmful gas emissions, making such environments much safer.



### Why It Matters for Safety

FR-LSH cables are made with a special insulation formula that limits the release of toxic gases and smoke, helping protect people from serious health risks during a fire.



### Higher Resistance to Fire

One of the key benefits of FRLSH insulation is its high oxygen index of 30%. This means it will only catch fire if the oxygen level in the air is above 30%—but in reality, atmospheric oxygen is only about 21%. This makes FRLSH cables highly resistant to ignition and safer in fire-prone situations.



### Stops Fire from Spreading

FR-LSH cables have a built-in self-extinguishing property, meaning they won't allow flames to spread. This helps control fires more effectively, reducing damage and increasing the chances of safe evacuation. In short, FRLSH cables provide an extra layer of protection in buildings where fire safety is critical, ensuring lower smoke, fewer toxic emissions, and reduced fire hazards.

# SINGLE CORE FR-LSH PVC INSULATED COPPER CONDUCTOR (UNSHEATHED) FLEXIBLE CABLES, 1100 VOLT

Nominal cross-sectional area of conductor	Number/ Maximum Diameter of conductor of strands*	Nominal Thickness of Insulation	Approx. overall Diameter	Current carrying capacity 2 cables single Phase		Maximum Conductor Resistance per kilometer 20 C
				Conduit/ Trunking	Unenclosed clipped directly to a surface or on cable trays	
(Sq.mm)	(mm)	(mm)	(mm)	A	A	(Ω ohm)
1.0 sq. mm**	14 N/0.3 mm	0.7mm	2.7mm	13 A	15 A	18.10 Ω (Ohm)
1.5 sq. mm**	22 N/0.3 mm	0.7mm	3.0mm	17 A	19 A	12.10 Ω (Ohm)
2.5 sq. mm**	36 N/0.3mm	0.8mm	3.6mm	23 A	26 A	7.41 Ω (Ohm)
4.0 sq. mm	56 N/0.3mm	0.8mm	4.1mm	29 A	32 A	4.95 Ω (Ohm)
6.0 sq. mm	84 N/0.3mm	0.8mm	4.6mm	39 A	43 A	3.30 Ω (Ohm)

**CONSTRUCTION :**

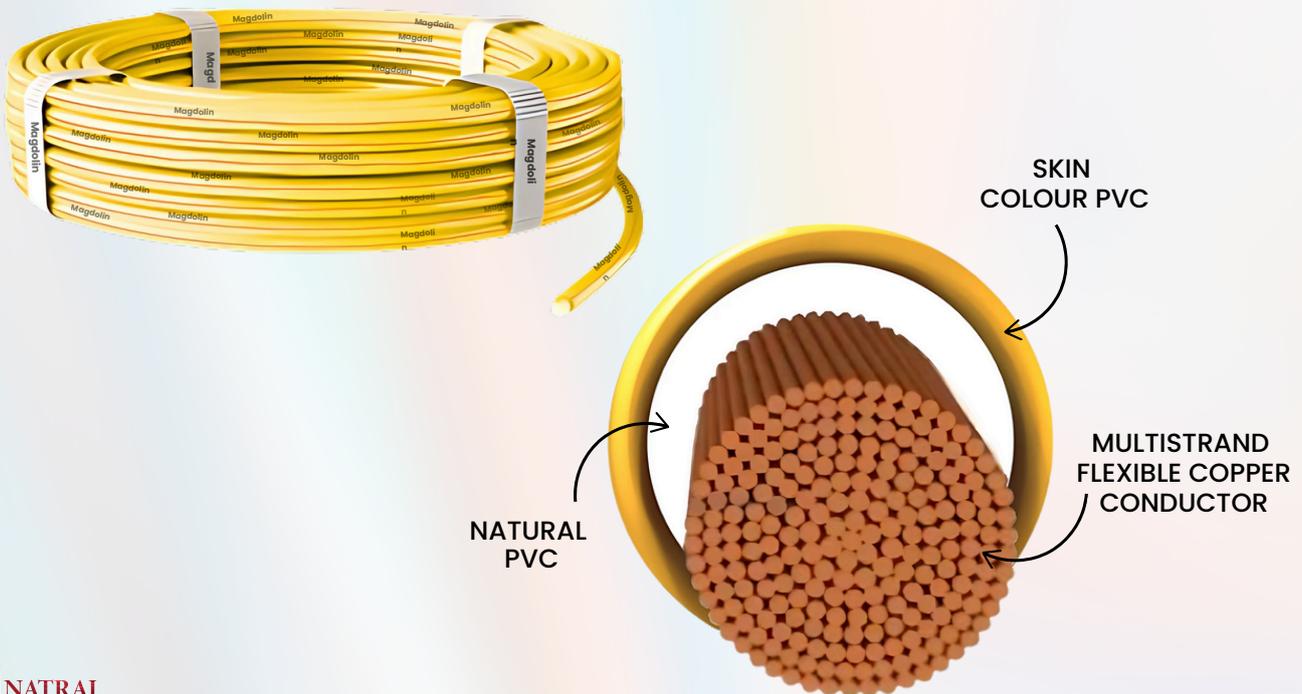
**Conductor :** Plain annealed copper conductor as per IS 8130

**Insulation :** FR-LSH PVC

**Colour :** Red/Yellow/Blue/Black/Green

(Any other colour on specific request can also be supplied)

**NOTE: PROJECT PACKING IN 180 METER IS ALSO AVAILABLE.**



## ZHFR (Zero Halogen Flame Retardant)

A result of extensive R&D at Natraj Industries, this innovative compound is nearly halogen-free and boasts an exceptionally high oxygen index (>31%). Natraj cables are manufactured in compliance with IS 17048 standards.

ZHFR insulation has been specifically designed to enhance fire safety while offering superior flexibility and improved mechanical strength across the entire cable range.

The insulation and sheath of ZHFR cables are made from specialized materials, either thermoplastic or cross-linked ZHFR, capable of operating within a temperature range of -15°C to 90°C. These cables provide enhanced ozone resistance, reduced hot deformation, and improved electrical properties. Additionally, ZHFR insulation is designed to prevent the release of toxic fumes and smoke during combustion, ensuring better visibility with a light transmission rate of over 70%—significantly higher than standard PVC cables.

## NON-TOXIC

Studies indicate that the majority of fire-related casualties occur due to suffocation caused by the release of hazardous gases. PVC Flame Retardant Low Smoke and Halogen (FRLSH) cables emit significantly fewer toxic gases compared to standard PVC cables. In the event of a fire, FRLSH cables produce less than 60% smoke and release less than 20% halogen content. Our Zero Halogen Flame Retardant (ZHFR) cables are virtually halogen-free and offer 10 times better performance than FRLSH cables, with hazardous gas emissions reduced to less than 0.5%. This greatly improves air quality during a fire, enhancing the chances of survival and rescue for those trapped.





ZHFR insulated industrial cables are practically halogen-free, ZHFR Wire protecting not only you and your family, but also the future generations against the Green House Effect.



## Application



Our Cables insulated and sheathed with halogen free flame-retardant thermoplastic or cross-linked halogen free flame retardant thermosetting compound confirming to IS 17048 is suitable to use in electric power and lighting for indoor use in AC single phase or three phase (earthed or unearthed) systems with rated voltage up to and including 1100 V. This cable is also suitable for DC systems with rated voltage up to and including 1500 V to earth.

# SINGLE CORE ZHFR POLYMER INSULATED COPPER CONDUCTOR (UNSHEATHED) FLEXIBLE CABLES, 1100 VOLT

Nominal cross-sectional area of conductor	Number/ Maximum Diameter of conductor of strands*	Nominal Thickness of Insulation	Approx. overall Diameter	Current carrying capacity 2 cables single Phase		Maximum Conductor Resistance per kilometer 20 C
				Conduit/ Trunking	Unenclosed clipped directly to a surface or on cable trays	
(Sq.mm)	(mm)	(mm)	(mm)	A	A	(Ω ohm)
1.0 sq. mm**	14 N/0.3 mm	0.7mm	2.7mm	15 A	16 A	18.10 Ω (Ohm)
1.5 sq. mm**	22 N/0.3 mm	0.7mm	3.0mm	19 A	21 A	12.10 Ω (Ohm)
2.5 sq. mm**	36 N/0.3mm	0.8mm	3.6mm	25 A	28 A	7.41 Ω (Ohm)
4.0 sq. mm	56 N/0.3mm	0.8mm	4.1mm	32 A	35 A	4.95 Ω (Ohm)
6.0 sq. mm	84 N/0.3mm	0.8mm	4.6mm	43 A	47 A	3.30 Ω (Ohm)

**NOTE: PROJECT PACKING IN 180 METER IS ALSO AVAILABLE.**

## CONSTRUCTION:

**Conductor:** Plain annealed copper conductor as per IS 8130

**Insulation:** ZHFR PVC

**Colour:** Red/Yellow/Blue/Black/Green

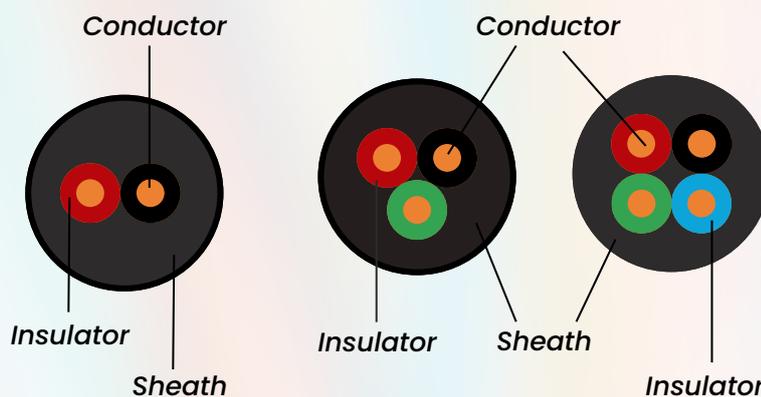
(Any other colour on specific request can also be supplied)



# MULTICORE ROUND PVC INSULATED COPPER CONDUCTOR (SHEATHED) FLEXIBLE CABLES, 1100 VOLTS

Natraj Industries specializes in manufacturing and supplying premium-quality multicore flexible cables with copper conductors, designed for a wide range of industrial and domestic applications such as air conditioners, refrigerators, motors, and other electrically operated machines and equipment.

Area in (Sq.mm)	Construction No./Dia (mm)	Cond. Dia. (mm)	Max. DC resist- ance at 20°C ( $\Omega$ /km)	Insulation thickness nominal (mm)	Core dia. (mm)	Sheath thickness in mm nominal			Overall Diameter in mm approx.			Current Rating Amp. A
						2 core (mm)	3 core (mm)	4 core (mm)	2 core (mm)	3 core (mm)	4 core (mm)	
0.50	16/0.2	0.94	39.00	0.60	2.20	0.90	0.90	0.90	6.20	6.60	7.20	4
0.75	24/0.2	1.20	26.00	0.60	2.50	0.90	0.90	0.90	6.80	7.20	7.90	7
1.00	32/0.2	1.34	19.50	0.60	2.60	0.90	0.90	0.90	7.00	7.50	8.10	12
1.50	30/0.25	1.64	13.30	0.60	2.90	0.90	0.90	1.00	7.60	8.10	9.00	16
2.50	50/0.25	2.08	7.98	0.70	3.50	1.00	1.00	1.00	9.00	9.60	10.50	22
4.00	56/0.3	2.61	4.95	0.80	4.30	1.00	1.00	1.00	10.60	11.30	12.40	29



Our cables feature specially formulated Polyvinyl Chloride (PVC) insulation and sheathing, ensuring excellent flexibility and durability. The sheathing material is engineered to resist oil, moisture, and provide superior mechanical strength, all while maintaining flexibility. Additionally, cables can be customized with Fire Retardant (FR) or Fire-Retardant Low Smoke & Halogen (FR-LSH) compounds upon request.

## MULTICORE ROUND FLEXIBLE CABLE

Area in	Construction No./Dia	Cond. Dia.	Max. DC resist- ance at 20°C	Insulation thickness nominal	Core dia.	Sheath thickness in mm nominal			Overall Diameter in mm approx.			Current Rating Amp.
						2 core	3 core	4 core	2 core	3 core	4 core	
(Sq.mm)	(mm)	(mm)	( $\Omega$ /km)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(mm)	A
6	84/0.3	3.50	3.30	0.80	5.10	1.15	1.15	1.40	12.60	13.40	15.20	37
10	140/0.3	4.60	1.91	1.00	6.60	1.40	1.40	1.40	16.00	17.00	18.80	51
16	126/0.4	6.00	1.21	1.00	8.00	1.40	1.40	1.40	18.80	20.10	22.20	68
25	196/0.4	7.60	0.780	1.20	10.00	2.00	2.00	2.00	24.00	25.60	28.20	86
35	276/0.4	8.70	0.554	1.20	11.10	2.00	2.00	2.00	26.30	28.00	31.00	110
50	396/0.4	10.60	0.386	1.40	13.40	2.00	2.00	2.00	30.90	33.00	36.50	145
70	360/0.5	12.30	0.272	1.40	15.10	2.00	2.20	2.40	34.20	37.00	41.00	215



## MULTICORE ROUND CONTROL CABLE (6 CORES TO 30 CORES)

Area Sq. mm		0.50	0.75	1.00	1.50	2.50	4.00
General construction no./dia		16/0.2	24/0.2	32/0.2	30/0.25	50/0.25	56/0.3
Conductor Dia. In (mm)		0.94	1.20	1.34	1.64	2.08	2.61
Avg. Insu. Thickness in mm		0.60	0.60	0.60	0.60	0.70	0.80
Core Diameter in mm		2.20	2.50	2.60	2.90	3.50	4.30
No. of cores							
6	Avg. Sheath thickness (mm)	0.90	1.00	1.00	1.00	1.10	1.20
	App. Overall Dia (mm)	8.50	9.50	9.80	10.70	12.70	15.30
7	Avg. Sheath thickness (mm)	0.90	1.00	1.00	1.00	1.10	1.20
	App. Overall Dia (mm)	8.50	9.50	9.80	10.70	12.70	15.30
8	Avg. Sheath thickness (mm)	1.00	1.00	1.00	1.10	1.20	1.30
	App. Overall Dia(mm)	9.30	10.40	10.70	11.90	14.10	16.90
10	Avg. Sheath thickness (mm)	1.00	1.10	1.10	1.10	1.30	1.40
	App. Overall Dia (mm)	10.80	12.20	12.60	13.80	16.60	20.00
12	Avg. Sheath thickness (mm)	1.00	1.10	1.10	1.10	1.30	1.40
	App. Overall Dia (mm)	11.20	12.60	13.00	14.30	17.20	20.70



## MULTICORE ROUND CONTROL CABLE (6 CORES TO 30 CORES)

Area Sq. mm		0.50	0.75	1.00	1.50	2.50	4.00
General construction no./dia		16/0.2	24/0.2	32/0.2	30/0.25	50/0.25	56/0.3
Conductor Dia. In (mm)		0.94	1.20	1.34	1.64	2.08	2.61
Avg. Insu. Thickness in mm		0.60	0.60	0.60	0.60	0.70	0.80
Core Diameter in mm		2.20	2.50	2.60	2.90	3.50	4.30
No. of cores							
14	Avg. Sheath thickness (mm)	1.10	1.10	1.10	1.20	1.30	1.40
	App. Overall Dia (mm)	12.00	13.30	13.70	15.20	18.10	21.80
16	Avg. Sheath thickness (mm)	1.10	1.20	1.20	1.20	1.40	1.50
	App. Overall Dia (mm)	12.60	14.20	14.60	16.00	19.30	23.20
19	Avg. Sheath thickness (mm)	1.10	1.20	1.30	1.30	1.40	1.50
	App. Overall Dia (mm)	13.20	14.90	15.60	17.10	20.30	24.50
24	Avg. Sheath thickness (mm)	1.20	1.30	1.30	1.40	1.40	1.50
	App. Overall Dia (mm)	15.60	17.60	18.20	20.20	23.80	28.80
30	Avg. Sheath thickness (mm)	1.30	1.30	1.30	1.40	1.40	1.50
	App. Overall Dia (mm)	16.80	18.70	19.30	21.50	25.70	30.60
Max. conductor Resistance in Ohm/km at 20 deg. C		39.00	26.00	19.50	13.30	7.98	4.95
Recommended Current Rating in AMP		4	7	12	16	22	29

### NOTE:

Available in 100 meter length with black outer sheath & in customize packing on request. Any colour on specific request can be supplied, in economical run.

\* The number and diameter of conductor strands are for reference only. Conductor resistance as per IS 8130 is the governing criteria.

Conductor shall be of Class-V as per IS 8130

Progressive sequential length marking on every meter above 6.00 sq. mm.

\* Available in FR and FR-LSH outer sheathing on Request.

### CORE IDENTIFICATION:

**2 CORE :** Red & Black

**3 CORE :** Red, Black & Yellow-Green

**4 CORE :** Red, Yellow, Blue & Yellow-Green

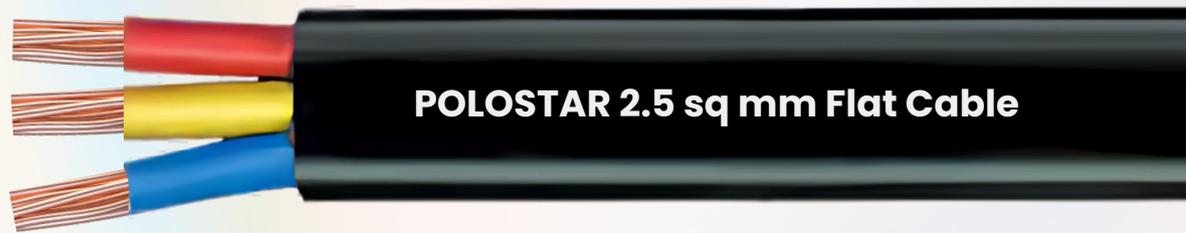
**5 CORE :** Red, Yellow, Blue, Black & Grey

**6 CORE :** Red, Yellow, Blue, Green, White & Yellow-Green

**7 CORE & Above :** Number printing on each core / Colour code as specified in IS:694

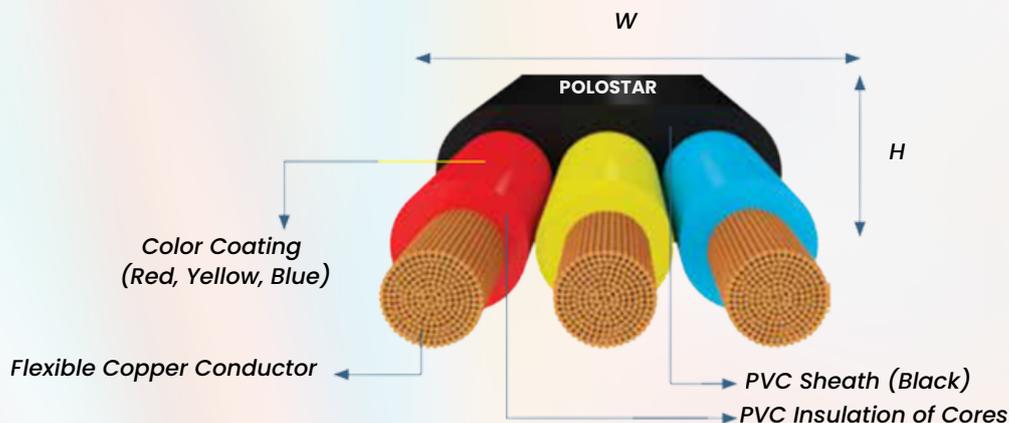
## THREE CORE FLAT PVC INSULATED COPPER CONDUCTOR FOR SUBMERSIBLE USE, 1100 VOLT

A submersible pump cable is specifically designed for deep well applications, ensuring reliable performance in challenging environments. Given the confined installation space and harsh conditions, Polostar offers three-core submersible flat cables engineered for durability. These cables are ideal for use underground, underwater, or on moisture-prone surfaces, providing safe and efficient power transmission for submersible pumps.



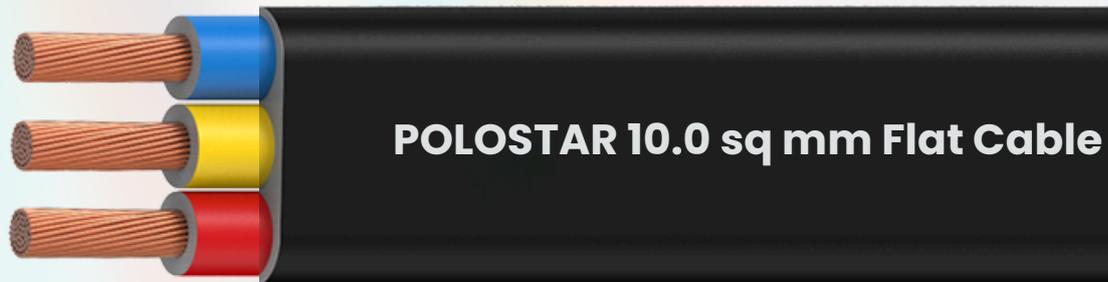
### Features of Polostar 3 Core Submersible Flat Cable:

- The outer sheath consists of highly abrasion resistant PVC compound impervious to grease, oil and water etc.
- Good insulation properties when submerged in water
- Excellent mechanical & electrical properties.
- Progressive sequential length marking on every meter.



## THREE CORE FLAT PVC INSULATED COPPER CONDUCTOR CABLE FOR SUBMERSIBLE USE, 1100 VOLT

Nominal area of conductor (Sq.mm)	Number/ Size of Wire for each Core (mm)	Nominal Thickness of Insulation (mm)	Nominal Thickness of Sheath (mm)	SHEATH Approx Overall Dimension		Maximum Conductor Resistance at 20 °C (Ω/km)	Current Carrying Capacity at 40 °C A
				Width (W) (Nom). mm	Height (H) (Nom). mm		
1.00 sq. mm	32 N/0.20 mm	0.6 mm	0.9 mm	9.4 mm	4.4 mm	19.50 Ω/km	11 A
1.50 sq. mm	30 N/0.20 mm	0.6 mm	0.9 mm	10.1 mm	4.7 mm	13.30 Ω/km	13 A
2.50 sq. mm	50 N/0.25 mm	0.7 mm	1.0 mm	12.2 mm	5.5 mm	7.98 Ω/km	18 A
4.00 sq. mm	56 N/0.30 mm	0.8 mm	1.0mm	14.6mm	6.5 mm	4.95 Ω/km	24 A
6.00 sq. mm	84 N/0.30 mm	0.8 mm	1.1 mm	16.2 mm	7.0 mm	3.30 Ω/km	31 A
10.00 sq. mm	80 N/0.40 mm	1.0 mm	1.4 mm	20.2 mm	8.5 mm	1.91 Ω/km	42 A
16.00 sq. mm	126 N/0.40 mm	1.0 mm	1.4mm	23.4 mm	9.7 mm	1.21 Ω/km	57 A
25.00 sq. mm	196 N/0.40 mm	1.2 mm	2.0 mm	28.5 mm	11.7 mm	0.780 Ω/km	72 A
35.00 sq. mm	276 N/0.40 mm	1.2 mm	2.0 mm	32.1 mm	13.0 mm	0.554 Ω/km	90 A



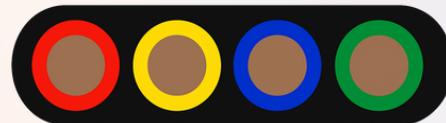
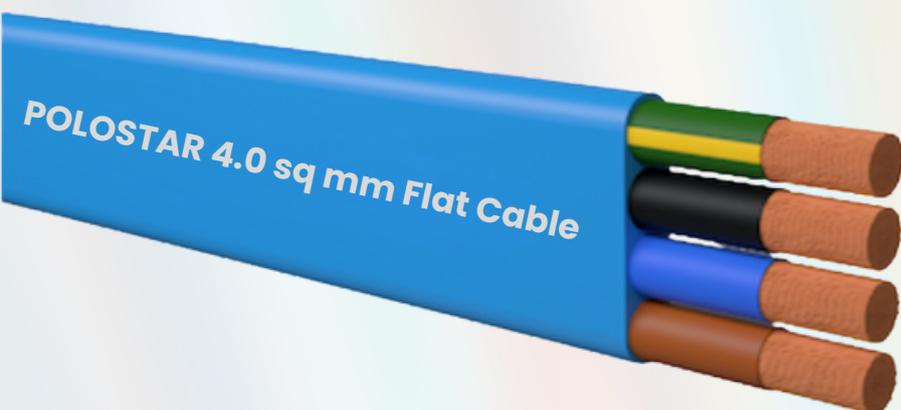
### NOTE:

Available in 500 ± 5% meter packing in drums. Also available in 100 meter packing on request.

\*The number and diameter of conductor strands are for reference only. Conductor resistance as per IS 8130 is the governing criteria

## FOUR CORE FLAT PVC INSULATED COPPER CONDUCTOR CABLE FOR SUBMERSIBLE USE, 1100 VOLT

Nominal Size in	Nos. & Dia of Wire	Nominal Thickness of Insulation	Nominal Core Dia.	PVC Sheath		Conductor Resistance at 20 °C (Max) ohms/km	Current Rating at 40 °C Amps.	
				Nominal Thickness	Approx. Overall Dimensions			
(Sq.mm)	(Nos./mm)	(mm)	(mm)	mm	Height mm	Width mm	(Ω/km)	A
1.50	22/0.30	0.80	3.25	1.30	6.20	15.80	12.10	14
2.50	36/0.30	0.90	3.80	1.30	6.40	18.00	7.41	18
4.00	56/0.30	1.00	4.50	1.15	7.40	21.00	4.95	26
6.00	84/0.30	1.00	5.25	1.50	8.00	24.50	3.30	31
10.00	140/0.30	1.00	6.50	1.80	9.90	29.70	1.91	42
16.00	224/0.30	1.00	8.00	1.95	11.80	36.00	1.21	57
25.00	350/0.30	1.20	10.10	2.00	14.70	45.10	0.780	72



### NOTE:

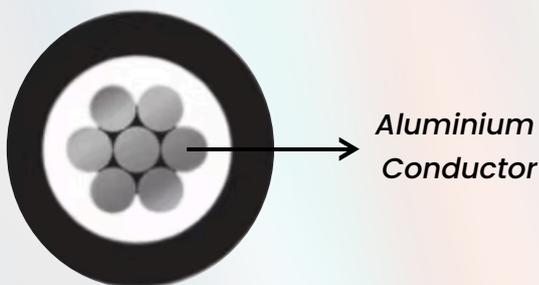
Available in 500 ± 5% meter packing in drums. Also available in 100 meter packing on request.

\*The number and diameter of conductor strands are for reference only. Conductor resistance as per IS 8130 is the governing criteria.

Core and Sheathing colors on specific request can also be supplied.

# SINGLE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMoured CABLE 1100 VOLT as per IS 7098- 1/1988

Nominal Size of Conductor	Form of Conductor Circular	Nominal Thickness of XLPE Insulation for U/A	Minimum Thickness of PVC Inner Sheath	Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable
(Sq.mm)		(mm)	(mm)	(mm)	(mm)	(Kgs. /Km)
4	Solid	0.7	-NA-	1.8	7.5	60
4	Stranded	0.7	-NA-	1.8	8.0	65
6	Solid	0.7	-NA-	1.8	8.0	70
6	Stranded	0.7	-NA-	1.8	8.5	75
10	Solid	0.7	-NA-	1.8	9.0	80
10	Stranded	0.7	-NA-	1.8	9.5	90
16	Stranded	0.7	-NA-	1.8	10.0	115
25	Stranded	0.9	-NA-	1.8	12.0	155
35	Stranded	0.9	-NA-	1.8	13.0	180
50	Stranded	1.0	-NA-	1.8	14.0	240
70	Stranded	1.1	-NA-	1.8	16.0	310
95	Stranded	1.1	-NA-	1.8	17.5	385
120	Stranded	1.2	-NA-	1.8	19.0	470
150	Stranded	1.4	-NA-	2.0	21.5	600
185	Stranded	1.6	-NA-	2.0	23.5	710
240	Stranded	1.7	-NA-	2.0	26.0	900
300	Stranded	1.8	-NA-	2.0	28.5	1075
400	Stranded	2.0	-NA-	2.2	33.0	1385



**NOTE:**

The above data is approximate and subject to manufacturing tolerance.

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

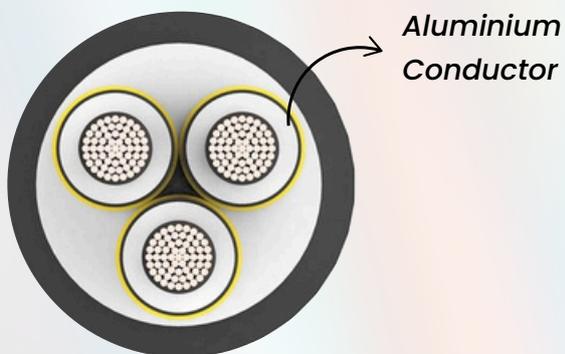
## TWO CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMoured CABLE 1100 VOLT as per IS 7098- 1/1988

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable
(Sq.mm)		(mm)	(mm)	(mm)	(mm)	(Kgs./Km)
4	Solid	0.7	0.3	1.8	12.5	140
4	Stranded	0.7	0.3	1.8	13.0	150
6	Solid	0.7	0.3	1.8	13.5	170
6	Stranded	0.7	0.3	1.8	14.0	180
10	Solid	0.7	0.3	1.8	15.0	205
10	Stranded	0.7	0.3	1.8	16.0	225
16	Stranded	0.7	0.3	1.8	14.0	225
25	Stranded	0.9	0.3	2.0	17.0	330
35	Stranded	0.9	0.3	2.0	19.0	410
50	Stranded	1.0	0.3	2.0	21.0	510
70	Stranded	1.1	0.3	2.0	23.0	675
95	Stranded	1.1	0.4	2.2	26.5	900
120	Stranded	1.2	0.4	2.2	28.5	1050
150	Stranded	1.4	0.4	2.2	32.0	1215



## THREE CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMoured CABLE 1100 VOLT as per 7098- 1/1988

Nominal Size of Conductor (Sq.mm)	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation (mm)	Minimum Thickness of PVC Inner Sheath (mm)	Nominal Thickness of PVC Outer Sheath (mm)	Approx. Overall Diameter of Cable (mm)	Approx. Weight of Cable (Kgs./Km)
4	Solid	0.7	0.3	1.8	14.0	140
4	Stranded	0.7	0.3	1.8	15.5	160
6	Solid	0.7	0.3	1.8	15.5	170
6	Stranded	0.7	0.3	1.8	16.0	190
10	Solid	0.7	0.3	1.8	17.0	220
10	Stranded	0.7	0.3	1.8	18.0	230
16	Stranded	0.7	0.3	1.8	18.0	310
25	Stranded	0.9	0.3	2.0	20.0	460
35	Stranded	0.9	0.3	2.0	21.5	575
50	Stranded	1.0	0.3	2.0	24.5	700
70	Stranded	1.1	0.4	2.2	29.0	990
95	Stranded	1.1	0.4	2.2	32.5	1250



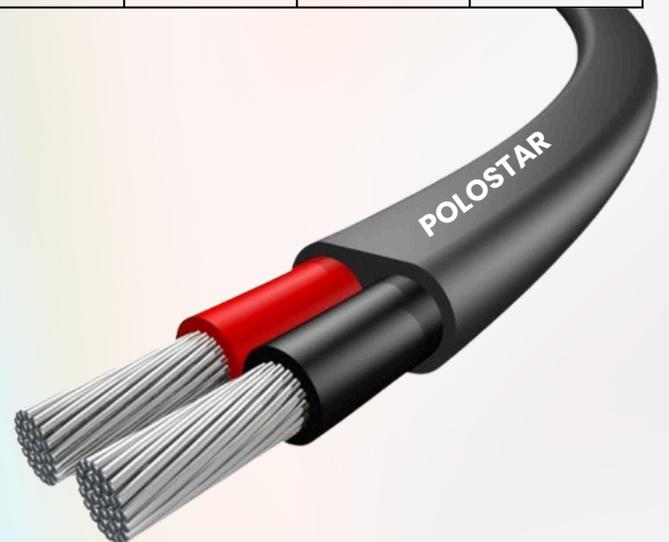
## FOUR CORE ALUMINIUM CONDUCTOR, XLPE INSULATED, UNARMoured CABLE 1100 VOLT as per IS 7098- 1/1988

Nominal Size of Conductor	Form of Conductor Circular Shaped	Nominal Thickness of XLPE Insulation	Minimum Thickness of PVC Inner Sheath	Nominal Thickness of PVC Outer Sheath	Approx. Overall Diameter of Cable	Approx. Weight of Cable
(Sq.mm)		(mm)	(mm)	(mm)	(mm)	(Kgs./Km)
4	Solid	0.7	0.3	1.8	15.0	160
4	Stranded	0.7	0.3	1.8	16.0	180
6	Solid	0.7	0.3	1.8	16.5	200
6	Stranded	0.7	0.3	1.8	17.5	215
10	Solid	0.7	0.3	1.8	18.0	250
10	Stranded	0.7	0.3	1.8	18.5	260
16	Stranded	0.7	0.3	1.8	17.5	350
25	Stranded	0.9	0.3	2.0	21.0	550
35	Stranded	0.9	0.3	2.0	23.5	680
50	Stranded	1.0	0.3	2.0	26.0	875
70	Stranded	1.1	0.4	2.2	30.5	1200



## TWIN FLAT ALUMINIUM CABLES

Conductor Area	No. of Strands/Size	Nominal Insulation Thickness	Nominal Sheath Thickness	Max. Height	Max. Width	Max. DC Resistance at 200°C	Current Carrying Capacity
(Sq.mm)	(mm)	(mm)	(mm)	(mm)	(mm)	(Ω/Km)	A
2.5	7/0.7	0.8	10	6.60	10.50	12.10	18
4.0	7/0.85	0.8	10	7.40	12.00	7.41	23
6.0	7/1.04	1.0	15	8.00	13.00	4.61	30
10.0	7/1.35	1.20	15	9.60	16.00	3.08	40
16.0	7/1.70	1.20	20	10.50	19.50	1.91	55
25.0	7/2.13	1.60	20	13.50	24.60	1.20	70



### CABLE STRUCTURE:

- **Conductor** : Aluminum conductor solid / stranded round class 2 as per IS 8130
- **Standard** : Conforming to IS: 694 / 2010
- **Core Insulation** : Virgin grade natural PVC (Type A, C and D).
- **Sheath insulation** : Skin colour PVC of type ST1 or ST3.
- **Sizes** : 2.50 Sq.mm. TO 25.0 Sq.mm.
- **Cable Code** : AYY
- **Core Colours** : Red & Black
- **Colours Available** : Black & Yellow
- **Packing** : 100/300/500 mtrs coil.

### FEATURES:

- Weather Proof (WP) Cables

# SPEAKER CABLES

**NATRAJ INDUSTRIES** brand **“POLO Twin Parallel Speaker Cables”** are engineered using multi-strand, bright annealed, flexible bare electrolytic grade copper conductors. These are insulated with a specially formulated, transparent PVC compound that ensures superior flexibility, making installation easy—especially when pulling through conduits—without risk of damage.

For quick and convenient identification, one core is marked with a continuous red stripe along its length. The spacing between the two conductors is maintained uniformly to ensure consistent capacitance throughout the cable, minimizing signal distortion.

With their transparent insulation, the cables also offer an aesthetically pleasing appearance. These speaker cables are ideal for connecting audio systems, particularly in public address installations within large residential complexes, in line with modern Building Codes. They deliver crystal-clear sound quality with minimal dB loss.

Available in conductor sizes of 20, 19, 18, 16, 14, and 13 AWG, these cables come in 90-meter coil packs.



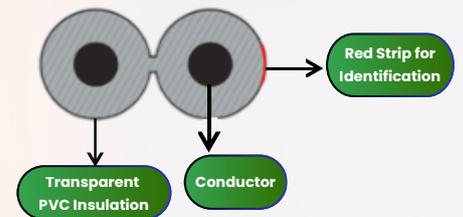
# SPEAKER CABLES

## Technical Details

Conductor			Approximate Overall Dimensions (mm)			
Size AWG	Nominal Area of Cond. (sq.mm)	Max. Conductor Resistance ohms/km 20°C	Max Width (mm)	Max Height (mm)	Thickness (mm)	Web Dims. W x H
20	0.5	39.0	4.45	2.00	0.6	0.5 x 0.4
19	0.75	26.00	5.45	2.50	0.6	0.5 x 0.4
18	1.0	21.4	6.05	2.80	0.7	0.5 x 0.4
16	1.5	13.3	6.25	2.90	0.7	0.5 x 0.4
14	2.0	9.00	7.00	3.30	0.75	0.5 x 0.4
13	2.5	7.98	7.4	3.45	0.75	0.5 x 0.4

## CABLE SPEAKER SELECTION CHART

	4 Ohm Speaker			8 Ohm Speaker		
	Power loss in %	11	21	50	11	21
loss in db	0.5	1.0	3.0	0.5	1.0	3.0
Max. Distance in Mtrs.						
20 AWG	8	16	60	16	32	119
19 AWG	10	21	85	21	65	170
18 AWG	12	27	103	26	58	208
16 AWG	18	38	143	35	76	285
14 AWG	27	59	226	56	120	451
13 AWG	34	74	282	71	151	564



**Note:** We can use this table for the selection of the cable. An example is shown below: For 14 AWG cable in 8 Ohm speaker system with power loss of 21% (1.0db) maximum length will be 120 mtrs.

# Co-Axial Cables

## Applications:

Used in cable TV operations, Computer net-working etc.

## Construction:

Solid annealed bare copper conductor polyethylene insulated shielded with polyester backed aluminium tape and additional shielding with fine aluminium braid protected with polyester tape wrapping and sheathed with PVC.



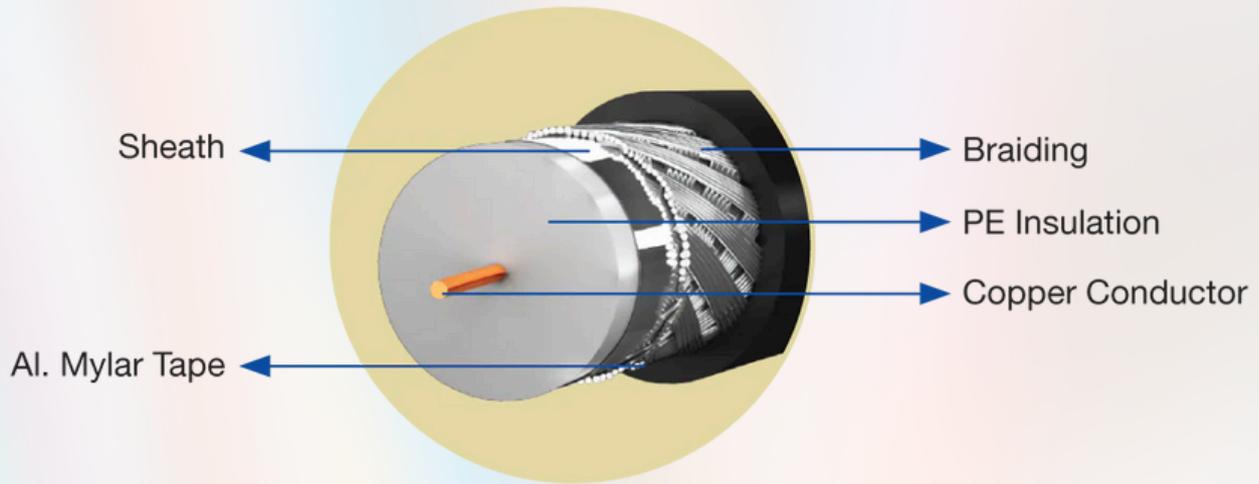
## Technical Data

S.No	Type	Properties
1	Size	RG-11, RG-59, RG-6
2	Inner Conductor	Solid Copper/CCS
3	Insulation	Gas Injected Physical Foamed Polyethylene
4	Outer Conductor	Bonded polyaluminium Tape, Braided with Aluminium Alloy Wire
5	Outer Jacket	UV Resistant Black PVC Jacket
6	Marking	Progressive Sequential Length Marking on Every Metre

## Electrical Parameters

S.No	Type	RG- 11 Foam	RG-59 Foam	RG-6 Foam
1	Inner Conductor			
	Max. Resistance $\Omega$ /km (Ohm per kilometers) @ 20 °C	0.84 $\Omega$ /km	3.55 $\Omega$ /km	2.13 $\Omega$ /km
2	Inner Conductor			
	Loop Resistance $\Omega$ /km (Ohm per kilometers) @ 20 °C	1.66 $\Omega$ /km	4.64 $\Omega$ /km	2.78 $\Omega$ /km
3	Nominal Capacitance (pF/m)	53 pF/m	53 pF/m	53 pF/m
4	Nominal Impedance $\Omega$ (Ohm)	75 $\Omega$	75 $\Omega$	75 $\Omega$
5	Nominal Velocity Ratio (%)	85%	85%	85%
6	Nominal Attenuation @ 25 °C (dB/100 m)			
	@55 MHz	2.82 dB	6.73 dB	1.95 dB
	@83 MHz	3.87 dB	8.04 dB	6.20 dB
	@187 MHz	5.74 dB	11.81 dB	9.15 dB
	@211 MHz	6.23 dB	12.47 dB	9.50 dB
	@250 MHz	6.72 dB	13.45 dB	10.50 dB
	@300 MHz	7.38 dB	14.60 dB	11.50 dB
	@350 MHz	7.94 dB	15.71 dB	12.45 dB
	@400 MHz	8.53 dB	16.73 dB	13.30 dB
	@450 MHz	9.02 dB	17.72 dB	14.35 dB
	@500 MHz	9.51 dB	18.70 dB	14.95 dB
	@550 MHz	9.92 dB	19.52 dB	15.70 dB
7	Structural Return Loss (dB/100 m)			
	From 30 MHz to 300 MHz	>26 dB	>30 dB	>28 dB
	From 300 MHz to 550 MHz	>24 dB	>24 dB	>22 dB
	Bending Radius, min (mm)	75 mm	65 mm	65 mm

**Note:** RG 6 also available in CCS



## CONSTRUCTION PARAMETERS

Type Foam	RG-11 Foam	RG-59 Foam	RG-6 Foam	RG 6 CCS Foam
Inner Conductor	Solid Bare Copper	Solid Bare Copper	Solid Bare Copper	Copper Coated Steel
Nominal Diameter (mm)	1.63 mm ± 0.03 mm	0.80 mm ± 0.03 mm	1.02 mm ± 0.03 mm	1.02 mm ± 0.03 mm
Dielectric	Foam PE	Foam PE	Foam PE	Foam PE
Nominal Diameter (mm)	7.11 mm	3.55 mm	4.57 mm	4.57 mm
Outer Conductor - First	Bonded AL Tape	Bonded AL Tape	Bonded AL Tape	Bonded AL Tape
Outer Conductor - Second	AL Braid	AL Braid	AL Braid	AL Braid
Nominal Coverage (%)	60%	60%	60%	60%
Jacket	PVC (Black)	PVC (Black)	PVC (Black)	PVC (Black)
Nominal Diameter (mm)	10.00 mm ± 0.20 mm	6.00 mm ± 0.10 mm	6.5 mm ± 0.10 mm	6.5 mm ± 0.10 mm

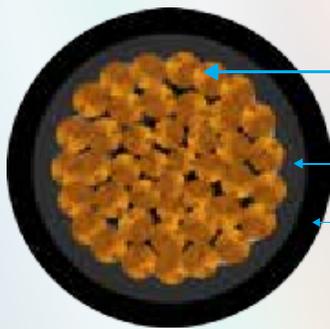
**Note:** Supplied in 90 m & 305 m project packaging.

# SOLAR CABLES

## INTRODUCTION



The solar photovoltaic industry is rapidly gaining recognition as one of the most promising and environmentally friendly sectors, poised to play a crucial role in addressing the global energy crisis. As production costs continue to decrease, solar energy is increasingly seen by users as a clean, cost-effective, and reliable source of power. In this context, the demand for solar cables—the key medium for transmitting power in solar energy systems—is expected to rise significantly in line with the expanding market.



Flexible tinned copper stranded class -5 conductors as per IEC-60228

Insulation – Cross linked

Polyolefin, Natural Color\*

Outer sheath – Cross linked

Polyolefin Black Color

*\*can be manufactured with Red/Black colour*

## SPECIAL PROPERTIES OF SOLAR CABLE

- ✓ **Lifetime reliability:** lasts up to 25 years even under tough external conditions.
- ✓ **Outdoor durability:** resists extreme temperatures ( $-40\text{ }^{\circ}\text{C}$  to  $120\text{ }^{\circ}\text{C}$  maximum at the core) and ozone resistant.
- ✓ **UV resistance:** full protection against ultraviolet rays.
- ✓ **Halogen-free:** Low Smoke Emission & Low Toxicity/Corrosivity during fire.
- ✓ **Properties against fire:** flame retardant, fire retar
- ✓ **Flexibility and stripability:** for fast and easy installation.
- ✓ **Fully recyclable:** in accordance with new environmental regulations.
- ✓ Easy installation with color identification (black, red)
- ✓ Suitable to common connector types and TÜV certified .

## Constituents

Natraj Industries, Briston solar cables are manufactured with the following materials.

1. Annealed Tinned Copper Conductor.
2. Cross Linked Polyolefin Compound (Insulation and Sheathing).

## Required Features of Solar Cables

### Chemical Features

- Weather resistant
- Resistant to mineral oils
- Resistant to acids & alkaline

### Thermal Features

- Maximum conductor temperature of operation -120 °C during 20000 hours.
- Minimum operating temperature: - 40 °C

### Electrical Features

- Voltage rating:1.5 kV (1.8) kV dc / 0.6 kV/1.0 kV (1.2) kV ac
- High voltage test: 6.5 kV dc for 5 minutes.

### Mechanical Features

- Resistant to Impact, tear & abrasion
- Minimum bending radius – 8 times of overall diameter
- Safe pulling force -50 N/sq. mm

## Tests and Ratings of Ratings of Solar Cables

### Severe Weather Resistance



Maximum Conductor Temperature  
120 °C IEC 60216



Resistance to Extreme Temperatures  
Minimum:-40 °C IEC 60811-1-4



Resistance to Ultraviolet  
Rays (UV) UL 1581



Resistance to Ozone  
IEC 60811-2-1



Resistance to Water Absorption  
IEC 60811-1-3

## TESTS AND RATINGS OF RATINGS OF SOLAR CABLES

### Life Expectancy



Design Life Time 30 Years  
IEC 60216

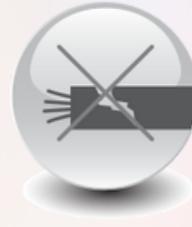
### Mechanical Resistance



Impact Resistance  
IEC 60811-1-4



Abrasion Resistance  
EN 50305



Tear Resistance  
IEC 61034-2

### Severe Weather Resistance



Environment-Friendly



Halogen Free  
IEC 60754-1



Low Corrosive Gas Emission  
IEC 60754-2



Low Smoke Opacity  
IEC EN 61034-2



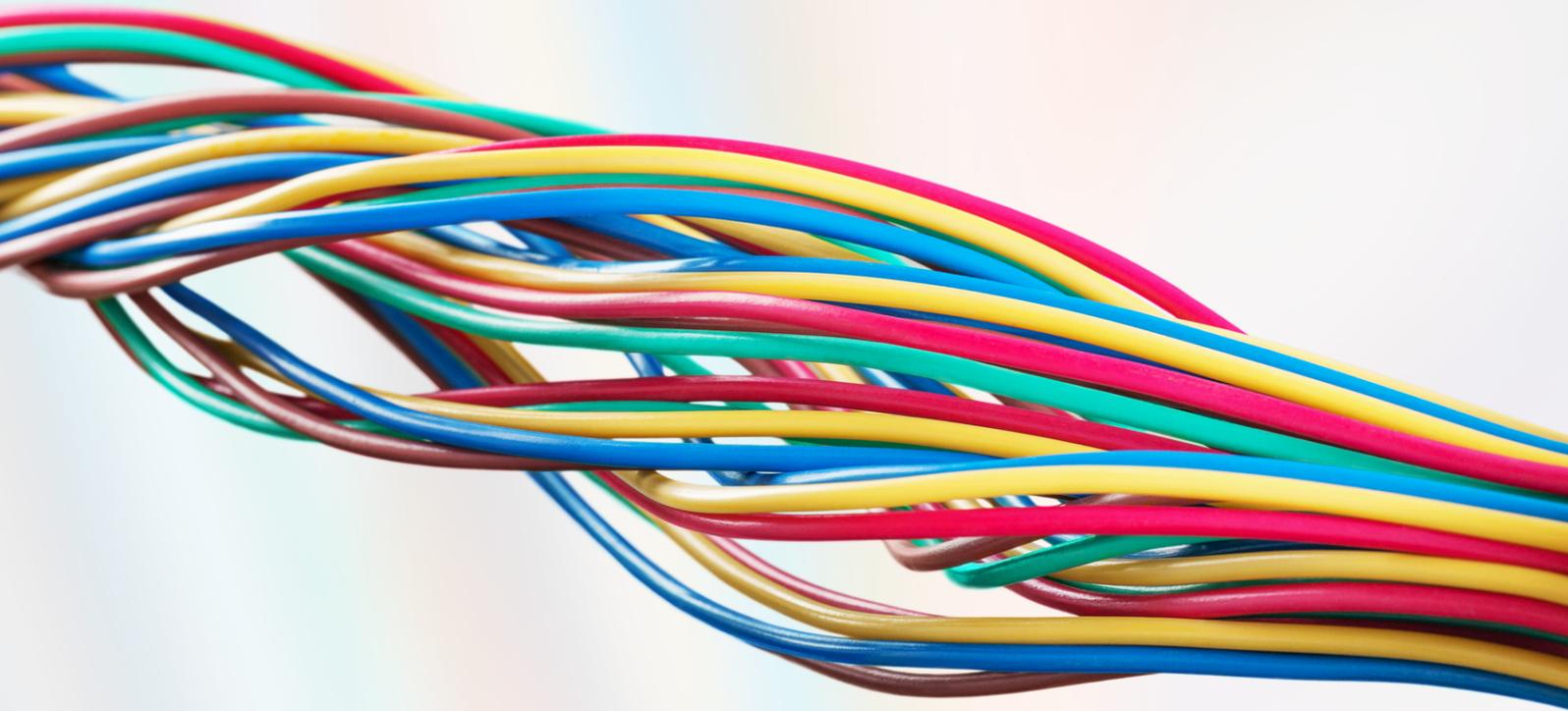
Non Fire Propagation  
IEC 60332-3

## REQUIRED FEATURES OF SOLAR CABLE

SIZE cross-sectional area in	Max. Conductor D.C. Resistance at 20°C	Average Diameter of Conductor	Approximate Overall Diameter		Minimum Bending Radius	Current Rating for Single Cable Free in Air	Short circuit current rating for 1 second duration
(Sq.mm)	(Ω/km)	(mm)	(mm)		(mm)	(A)	(kA)
1.5	13.7	1.46	4.46	4.86	38.88	30 A	0.189
2.5	8.21	1.88	4.88	5.08	42.24	41 A	0.315
4.0	5.09	2.41	5.41	5.61	46.32	55 A	0.504
6.0	3.39	2.95	5.95	6.15	50.64	70 A	0.756
10	1.95	3.86	7.26	7.66	61.28	98 A	1.26
16	1.24	5.39	8.79	9.19	73.52	132 A	2.02
25	0.795	6.73	10.53	11.13	89.04	176 A	3.15
35	0.565	8.08	11.88	12.48	99.84	218 A	4.41
50	0.393	9.69	13.49	14.09	112.72	276 A	6.30
70	0.277	11.54	15.34	15.94	127.52	347 A	8.82
95	0.210	13.25	17.05	17.85	142.8	416 A	11.97
120	0.164	15.00	18.80	19.60	156.8	488 A	15.12
150	0.132	16.77	21.37	22.37	178.96	566 A	18.90
185	0.108	18.54	23.54	24.54	196.32	644 A	23.31
240	0.0817	21.33	26.33	27.33	218.64	775 A	30.24



**WIRES YOU CAN TRUST,  
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STRONG WIRES. STRONGER BONDS.**



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