Product Profile

Hills Cab

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Hills Cab

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For
Better **World**

Profile & Approvals

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- Clear Scope Definition
- Efficiedn Resource Capacity Plans
- Quality Management
- Open Communication
- Managed Scope Change
- Regular Reporting and Creating
- A win/win approach

tips for our SUCCESS

Hills Cab
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Profile & Approvals

HILLS CAB is having relevent quality licenses. From the day of inception, the company is approved by Bureau of Indian Standards & all our products are certified with ISI mark. To name our international approvals, TCL, UKAS approved us for ISO 9001:2008. The company is also having various approvals from grovermment departments and private domestic as well as international consultants.

Short Profile

Hills Cab is leading manufactures of wires & cables, electrical accessories and Switch Gears since inception. We have Consistently followed a growth path owing to our philosophy of constant product innovation and up gradation. Our primary focus has been on customer delight. This is bought about bu a rich task force of qualified committed and experienced professionals to cater to the changing needs of our markets. The consribotion of these professionals has resulted in fierce commitment to our customers thereby delivering goods in terms of quality and timeless bringing in added value to our customers.

Our unblemished track record has earned us to patronage of leading industrial uses, product consultants and architects. The plants operate with state of art equipment and have the layout to address the safety and environmental requirements. Our certification from international consultant, Goverments Organisation, Testing laboratories, Engineers etc. affirms our commitmentto quality.

Meets additional requirements of International Standards

website : www.hillscab.in
email. : sales@hillscab.in

Product Basket

Exterior & Interior
Electrical Solutions

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- Housewires (FR/FRLS/HRPVC/HRFR)
- Low tension Copper / Aluminium conductor PVC & XLPE Power Cables
- Lowtension PVC & XLPE Control Cables
- Screened / Unscreended Type PVC / LDPE Instrumentation Cable
- FRLS / FR / HRFR/ HOFR / RUBBER / LDPE POWER, CONTROL & Instrumentation Cables
- Flexible (Single & Multicore)
- Railway Signaling Cables
- Fire survival, Zero Halogen Cable
- Dry & Jelly filled Telephone Cables
- Automobile Cables
- Welding Cables
- Submersible Cables / Winding Wires
- Switch Gear Products
- Changeover Switches
- MCB & Isolators

Exterior & Interior
Electrical Solutions

High Heat Flame Proof

HHFP

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High Heat Flame Proof

HHFP wires are recommended in situations where high degree of safety of personnel and equipments are obligatory like in hotels, theatres, hospitals, high-rise buildings, commercial complexes, centrally air-conditioned facilities, residential properties etc. Owing to its special insulation characteristics, the wires continue to provide uninterrupted power supply even during fire, keeping alive fire alarm circuits, exit lights, lifts and other emergency equipments. Our HHFP wires are made to international standards and carry a guarantee that fan exceeds the minimum requirements.

HILLS CAB has been a trendsetter in the Indian cables industry. We have introduced concepts such as HRFR properties and double colour/triple insulations as part of our standard product range. HILLS CAB had become on of the leading cable manufacturers in existing Flame Retardant properties in flexible cable as a standard feature. The advantage of HHFP is that the property enables the cables to carry more current than a normal PVC flexible cable, without any damage to the insulation. This feature is useful in domestic applications in most households the users often use multi plugs / extension cords to connect multiply equipments leading to overloading and heating of the whole system, resulting in deterioration of insulation. The HHFP properties in standard cables b y HILLS CAB ensure the life of the circuits and make them probably the safest home wiring flexible cables in the industry.

Single Core HHFP Insulated wires in voltage grade 650/1100 Volts

Nominal rea of Conductor	Number/Nom. Dia. Of wire	Thickness of Insulation (Nom.)	Approx. Overall Diameter	Current Carrying Capacity * Rating	Resistance (Max.) Per Km @ 20℃
Sq. mm	mm	mm	mm	Amps.	Ohms.
1.0	14/0.3	0.7	2.8	12	18.10
1.5	22/0.3	0.7	3.1	16	12.10
2.5	36/0.3	0.8	3.8	22	7.41
4.0	56/0.3	0.8	4.4	29	4.95
6.0	84/0.3	0.8	5.2	37	3.30

- 100 % Electrolytic Copper
- 102 % Conductivity
- 100 % Bunched
- PVC Specially Formulated
- 30 % Oxygen Index
- X-tra Flexible

Unique Features of our Process

- On-Line Wire drawing and annealing
- Automatic On-Line Critical Diameter Control
- High Speed Extruders
- Stringent Quality Control
- HRFR insulation
- BIS Hallmark

THERMO

Beyond FRLS

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Flame Retardant Low Smoke

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THERMO
Beyond FRLS

THERMO

Beyond FRLS

Application

This is a premium product of electrical wires from HILLS CAB. These cables are ideal for wiring in residential and commercial complexes, high-rise buildings, hotels, hospitals, schools, colleges etc. Where density of people high. During a fire these cables not only emit less smoke and toxic hydrochloric acid gas but also retard the spread of fire enabling those trapped inside to escape safely.

Features

Manufactured from bright annealed 99.97% pure bare copper conductors these cables have low conductor resistance resulting in power saving. These wires are insulated with a special grade PVC compound formulated and manufactured in-house. The insulation is for superior in terms of critical oxygen and temperature index as as also in light transmission and acid gas generation.

Technical Data

Conductor Area Sq. mm	Insulation Thickness mm	Configuration	Max. Overall Diameter mm	Conductor Resistance Ohm / Km @ 20℃ (Max.)	Current Rating Amps. Casing Concealed
1.0	14/0.3	0.7	2.8	12	18.10
1.5	22/0.3	0.7	3.1	16	12.10
2.5	36/0.3	0.8	3.8	22	7.41
4.0	56/0.3	0.8	4.4	29	4.95
6.0	84/0.3	0.8	5.2	37	3.30

FRLS Properties

Properties	Test Method	Value
Limited Oxygen Index	ASTM - 02863	Minimum 29%
Temperature Index	ASTM - 02863	Minimum 250°C
Smoke Density (Light Absorption)	ASTM - 02843	Minimum 20%
Acid Gas Gas Generation	IEC - 754 - 1	< .5%

Zero Halogen Flame Retardant

HALOGEN LESS WIRES

ZHFR

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ZHFR (Zero Halogen Flame Retardant)

ZHFR (Zero Halogen Flame Retardant) wiring cables are made with an imported and specially formulated Non-PVC material. Thanks to the advancements in polymer technology, the material does not emiy highly corrosive halogen acid gases / toxic fumes resulting in limited or nil smoke, in case of fire. On the contrary, conventional wiring cables emiy more toxic gases and smoke resulting in 100 % nil in visibility. The hampers the rescue operations resulting in loss of human lives. Add to it the environmental hazards caused by such emissions.

To make the building premises safer and reliable we offer ZHFR (Zero Halogen Flame Retardant), a special and advanced product replacing conventional ones.

A brief comparison of PVC Cables and ZHFR Cables is given below.

Properties	PVC	FRLS	ZHFR
Halogen Gas (mg/g)	>200	>150 (max)	>0.5 (max)
Corrosive Gas (pH)	1 - 2	2 - 3	6.0
Smoke Density (Rating)	85	50	10
Usage Temperature (°C)	70	85	90
Low Temperature (°C)	- 20	- 40	- 50
Dioxin	TES	TES	NO
Toxic Halogen Gas	TES	TES	NO
Lead	YES	YES	NO

Single Core Unsheathed Flexible Cables in voltage grade 1100 Volts Generally Conform IS:694:1990

Nominal cross sectional area of Conductor	Number/Nom. Dia. Of wire	Nominal Thickness of Insulation	Overall Diameter (Approx.)	Current carrying capacity # 2 cables, single phase		Max. Resistance of Conductor per Km @ 20℃
				In conduit/ trunking	Unenclosed-clipped directly to a surface or on cable tray	
Sq. mm	mm	mm	mm	Amps.	Amps.	Ohms.
1.0	14/0.3*	0.7	2.7	11	12	18.10
1.5	22/0.3*	0.7	3.1	13	16	12.10
2.5	36/0.3*	0.8	3.7	18	22	7.41
4.0	56/0.3**	0.8	4.3	24	29	4.95
6.0	84/0.3**	0.8	5.0	31	37	3.30
10.0	140/0.3	1.0	6.6	42	51	1.91

Standard Colours : Black, Red, Blue, Yellow, Green. (for earthing) Supplied in 90 metre lengths in attractive cartons and longer length in multiples of 90 metre in project packing.

Additional ZHFR Properties

Properties	Test Method	Value
Limited Oxygen Index	ASTM - D 2863	35 %
Limited Temp. Index	ASTM - D 2863	>300ºC
Smoke Density (Light absorption)	ASTM - D 2843	<10 %
Acid Gas Generation	IEC - 60754 -1	<5 %

Features

- Doesn't catch flame.
- Non corrosive & Non Toxic.
- Slow to burn reducing fire propagation and immediate threat; gives enough time to operate emergency services.
- Does not contain halogens, thus, hydrochloric acid is not formed during a fire. There is no threat of suffocation.

PVC Industrial Cable

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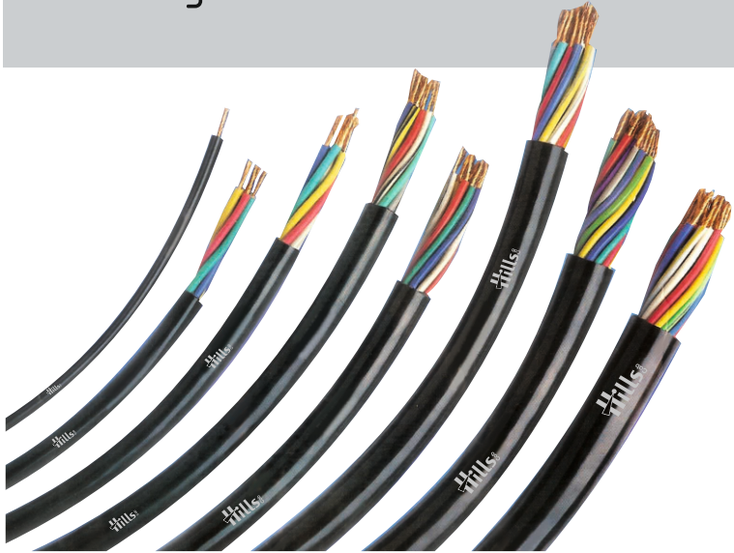


Hills is the market leader in Power Control and Industrial Cables. Hills is the fastest growing Company in cable industry, offering the widest range of wires & cables. Hills Singles & Multi Core PVC Industrial Wires & Cables find a wide range of applications in the control panels, appliances, machine tools, machinery and are used in almost every industry.

Conductors : The Conductors are drawn from bright electrolytic grade copper, annealed and bunched together.

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

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

Quality Control : You are assured of the highest quality strands I every Hillsproduct. Stringent quality control tests are appklied at aever stage from raw material to finished goods stage so as to give you the best product, meeting relevant quality standards. HillsPVC insulated Industrial Wires & Cables Single are manufactured as per IS 694:1990, in Single Core sizes from 0.5 sq.mm and Multi Core sheathed cables in sizes 0.5 Sq. mm to 16 Sq. mm upto 5 cores. These cable sizes are IS marked and are duly approved by FIA/TAC. The remaining sizes generally conforms to IS 694:1990.

Cables as per BS 604 : 1991 and BS 6500 : 1990 can be made available for export market. Special purpose Braided Cables / Screened instrumentation Cables are also available.

Single Core / Multi Core Industrial Cables As Per 694:1990Voltage Grade Upto 1100 Volts

Bare Copper Conductor, PVC Insulated Unsheathed 650/1100 V. Single Core Industrial Wire & Cables For Panel Board Wiring As Per IS:694/1990 With ISI Mark (Up to 50 Sq.)

Nominal Area In Sq. mm	No. of Strands / Nom. Dia In Sq. mm	Max. DC Resistance OHM/KM At 20°C	Nominal Insulation Thickness In mm	Outer Dia (Approx.	Current Rating in Amps.	Nominal Area In Sq. mm	No. of Strands / Nom. Dia	Max. DC Resistance OHM/KM At 20°C	Nominal Insulation Thickness in mm	Outer Dia (Approx.)	Current Rating In Amps.
0.50	16/0.20	39.00	0.60	2.20	4	70	360/0.5	0.272	1.6	15.5	215
0.75	24/0.20	26.00	0.60	2.50	7	95	485/0.5	0.206	1.8	18.5	260
1.00	32/0.20	19.50	0.60	2.60	12	120	608/0.5	0.161	2.0	20.9	305
1.50	48/0.20	13.30	0.60	2.90	16	150	750/0.5	0.129	2.0	22.5	355
2.50	80/0.20	7.98	0.70	3.50	22	185	925/0.5	0.106	2.2	24.6	415
4.00	56/0.30	4.95	0.80	4.30	29	240	1221/0.5	0.0801	2.2	27.6	500
6.00	84/0.30	3.300	0.80	5.30	37	300	1527/0.5	0.0641	2.4	32.2	585
10.00	140/0.30	1.910	1.00	6.70	51	400	2036/0.5	0.0486	2.6	35.7	695
16.00	101/0.45	1.210	1.00	8.20	68	500	2540/0.5	0.0384	2.8	38.0	790
25.00	157/0.45	0.780	1.20	10.00	86	630	3200/0.5	0.0287	3.0	45.5	905
35.00	220/0.45	0.554	1.20	11.3	110	800	4100/0.5	0.0224	3.4	51.0	1050

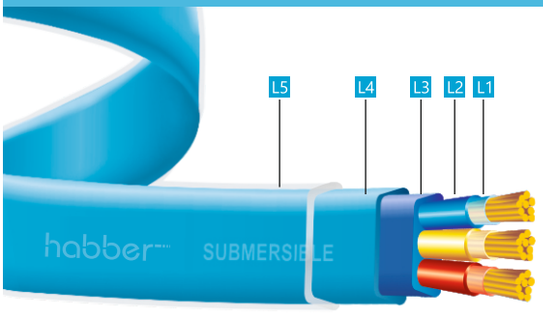
NOTE :

Industrial Cables Above 50 Sq. Mm Are Not Covered By IS:694 But Are As Per IS-2465

The Conductor Construction Given Above Is Indicative Only And Will Be Such That All Requirement Of Strand Diameter And Conductor Resistance As Per IS 694 And Is 2465 Are Met.

5L

World's Finest Cable
with five level of protection



99.5% Pure Copper

- L1 Cross Link Thermoset
- L2 UV Resistant Polymer
- L3 Low Moisture Absorption
- L4 Chemical Resistant
- L5 Cut & Scratch Proof

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- Pure copper & globally acclaimed polymers.
- U.V. and internal heat resistance upto 105Â°C.
- Reduce power consumption by 20%.
- Sustains voltage fluctuations.
- Excellent resistance to chemicals, oxides, oil & soil.
- Low water/moisture absorption.

SAFE non suffocation low density smoke | CURRENT high current carrying capacity | HEAT internal excessive heat resistance polymer | 99.9% pure copper | FLAME RESISTANT

Hills Cab
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5L
World's Finest Cable
with five level of protection

Powered features for Intelligent Tomorrow

Habber introduces the 3rd Generation Performance enhancing Submersible Cable with Stunning Performance features for intelligent tomorrow.

The polymers are based on same building block as nature. The sheath hazard factor is inversely proportionate to the environmental stress and hence the cable retains its original features even after prolonged time in underground / open and submerged conditions.The dual insulation protects cable from internal heat & external U.V. rays. The cable retains 90% tensile / elongation even in high (105Â°C) and low temp. (-10Â°C)

The submersible cable has to perform in submerged water conditions. Normal PVC absorbs water & shortens cable life. Habber's "World's Finest Cable with five level of protection" has very good resistance to water / moisture absorption thus increases cable life.

Technical Data

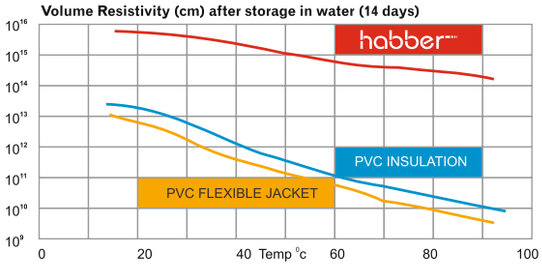
Conductor Area Sq. mm	Conductor No. of Strands/Dia. mm	Insulation Thickness (Nom) mm	Sheath Thickness (Nom) mm	Conductor Resistance @ 20°C (Max) ohms/km.	Conductor Carrying Capacity @ 40°C Amps.	Water Moisture Absorption	Resistance of Polymer
1.5	22/0.3	0.60	0.90	12.10	19	Less than 0.5 mg/cm²	Will not decompose in Soil, Oil, Chemical, Metal Oxides etc.
2.5	36/0.3	0.70	1.00	7.410	27		
4	56/0.3	0.80	1.10	4.950	40		
6	84/0.3	0.80	1.10	3.300	55		
10	140/0.3	1.00	1.20	1.910	80		
16	226/0.3	1.00	1.30	1.210	105		
25	354/0.3	1.20	1.50	0.780	130		
35	495/0.3	1.20	1.60	0.554	150		

The number of wires and its diameter in the conductor will be such as to satisfy requirement of the conductor resistance as per IS 8130:1984

Temp. Ratings (for all size) Condition	Temp
Normal	105°C
Overload	151°C
Short Circuit	305°C
Cold	-10°C
90% Retention (Elongation/Tensile)	100°C

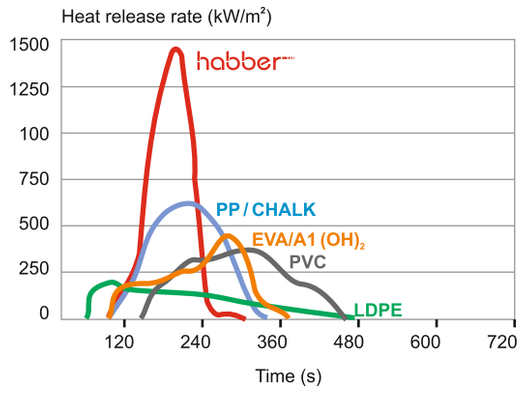
ELECTRICAL PROPERTIES

Volume Resistivity (cm) after storage in water (14 days)



The 3rd generation Twin Insulation gives very high thermal properties (+ 105°C to -10°C) and excellent insulating (V.R.) properties there by reducing power consumption to at least 20% compared to local PVC.

Heat Release & Temp. Effect during voltage fluctuation



- Pure copper & globally acclaimed polymers.
- U.V. and internal heat resistance upto 105Â°C.
- Reduce power consumption by 20%.
- Sustains voltage fluctuations.
- Excellent resistance to chemicals, oxides, oil & soil.
- Low water/moisture absorption.

Co-Axial Cables

Co-Axial

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True Picture... True Sound...

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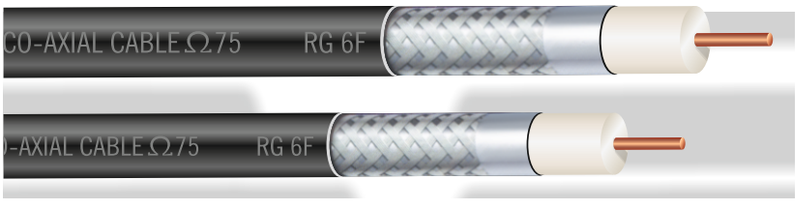

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Coaxial cable is the kind of copper cable used by cable TV companies between the community antenna and user homes and businesses. Coaxial cable is sometimes used by telephone companies from their central office to the telephone poles near users. It is also widely installed for use in business and corporation Eathernet and other types of local area network.

Coaxial cable is called "coaxial" because it includes one physical channel that carries the signal surrounded (after a layer of insulation) by another concentric physical channel, both running along the same axis. The outer channel serves as a ground. Many of these cables or pairs of coaxial tubes a=can be placed in a single outer sheathing and, with repeaters, can carry information for a great distance.

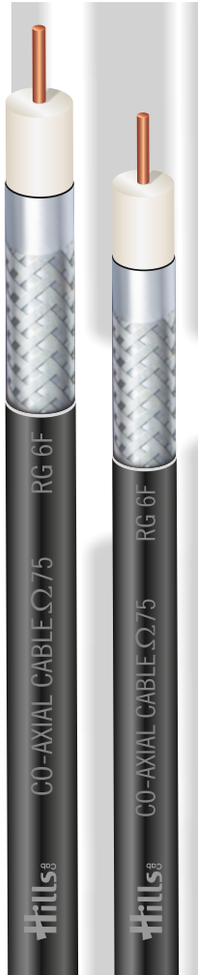
Coaxial cable was invented in 1929 and first used commercially in 1941. AT&T established its first cross-continental coaxial transmission system in 1940. Depending on the carrier technology used and other factors, twisted pair copper wire and optical fiber are alternatives to coaxial cable.

Salient Features

- Low Attenuation Values
- Minimum Structural Return Loss
- Low Loss In Signal Quality
- High Band Width
- Moisture Proof
- Excellent Adhesion

Construction Parameters	Unit	RG 59 F	RG 6 F	RG 11 F
Inner Conductor		Solid Bare Copper	Solid Bare Copper	Solid Bare Copper
Nom. Dia.	mm	0.8	1.02	1.63
Dielectric		Foam PE	Foam PE	Foam PE
Nom. Dia.	mm	3.55	4.57	7.11
Outer Conductor				
1st Shield		Bonded Al Tape	Bonded Al Tape	Bonded Al Tape
2nd Shield		ATC Braid	ATC Braid	ATC Braid
Min. Coverage	%	60	60	60
Jacket		PVC (Black)	PVC (Black)	PVC (Black)
Nom. Dia.	mm	6.2	7.2	10.5
Electrical Parameters	**Unit**	**RG 59 F**	**RG 6 F**	**RG 11 F**
Inner Conductor Max. Resi. at 20°C	Ohm / 100 Mtrs.	3.55	2.13	0.84
Nominal Capacitance	pf/mtr.	53	53	53
Characteristics Impedance	Ohm	75	75	75
Nominal Velocity Ratio	%	85	85	85
Attenuation bB/100 Mtrs. (20°C)	**Frequency**	**RG 59 F**	**RG 6 F**	**RG 11 F**
211	MHz	1247	9.50	6.23
250	MHz	13.45	10.50	6.72
300	MHz	14.60	11.50	7.38
350	MHz	15.75	12.45	7.94
400	MHz	16.73	13.30	8.53
450	MHz	17.72	14.35	9.02
500	MHz	18.70	14.95	9.51
550	MHz	19.52	15.70	9.97
600	MHz	20.34	16.45	1043
750	MHz	22.87	18.35	11.97
865	MHz	24.67	19.95	13.05
1000	MHz	26.64	21.45	14.27

All Figures are Approximate Presentation and may show Variation Under Different Conditions.



XLPE Sheathed & HHFP Insulated

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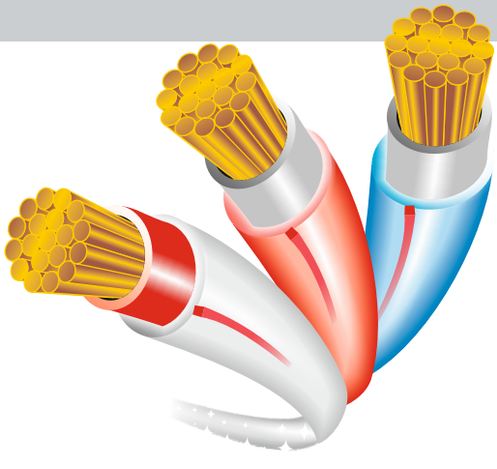


Hills Cab has developed a special grade XLPE compound to be used as the insulating material. Suitable for LT (upto 1100 volts) applications. This is a thermoset type of polymer enriched with cross linking agent. This is extruded over the conductor using modern extruders and is thoroughly cross linked under controlled conditions. This XLPE insulation overcomes the drawbacks of PVC, hitherto extensively used as an insulating material, without losing any of PVC's desirable properties

Higher Current Rating:

Withstands continuous conductor temperature of 90°C, whereas PVC withstands only 70°C, which means higher current carrying capacity.

Higher Overload Capacity:

XLPE cables can operate at 130°C, during emergency, unlike PVC Cables which cannot operate beyond 120°C. Thus in an emergency, the entire system need not go out of commission if some of the cables fail, because the other cables in parallel can carry a higher load.

Higher Short Circuit Rating :

Can withstand conductor temperatures of upto 250°C during short circuit - PVC cannot withstand more than 160°C.

Ligher weight, smaller bending radius :

Lighter weight, smaller bending radius that PVC enables installation of XLPE cables even in cramped space conditions. The cables require less support, thus lowering installation costs.

Ligher Di-electric Constant and Power Factor :

Results in saving in power losses which means saving in costs, particularly for higher voltage.

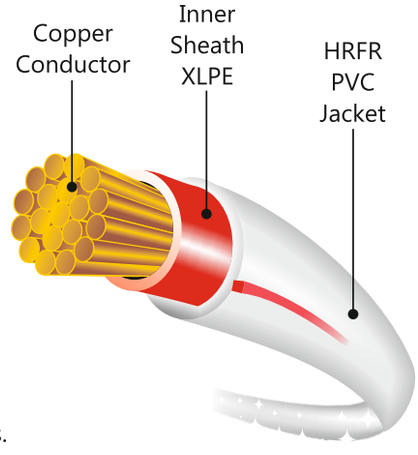
Better Impact, Abrasion, Corrosion, Resistance :

Safer than PVC Cables against mechanical damage, abrasion and corrosion.

Comparison of Properties

Properties		XLPE	PVC
Dielectric Constant		2.35	6 to 8
Dielectric Strength	KV/mm	22	14
Volume Resistivity at 27°C	Ohm-cm	10^{14}	10^{13}
Thermal Resistivity	°C cm/W	350	600
Power Factor at maximum Conductor Temperature		0.008	0.1
Normal Conductor Operating Temperature	°C	90	70
Emergency Overload Temperature	°C	130	120
Maximum Short Circuit Temperature	°C	250	160

Typical Cable Construction



QUALITY ASSURANCE

AT Hills Cab, Quality Assurance is ensured through planned, stage-wise quality checks.

These quality checks are made starting from the raw material right through every stage of manufacturing.

In particular, the property and specified test for XLPE compound is checked and the absence of contamination in the compound is noted against each batch of material received.

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with five level of protection

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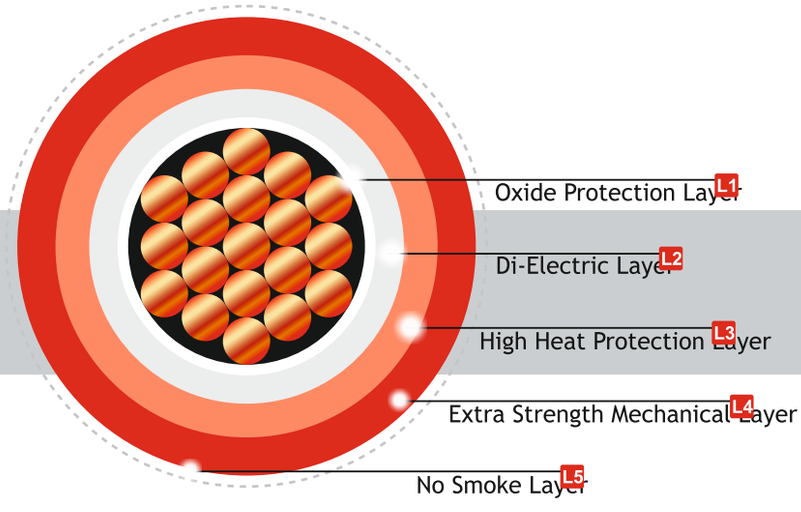

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5L

World's Finest Cable
with five level of protection

Habber range of wire from Hills cab is the one toughest and safest cable available on Earth, designed to meet modern day expectations. It goes beyond PVC and its performance enhancing Polymer coatings keeps the wire free from Oxide formation. These polymers has special features viz high current carrying capacity and are resistant to flame and internal excessive heat created by short circuits. In most of the Fire cases, more casualties have been on account of Black suffocating smoke emitted by PVC. Our wires have special polymers which emits very low density & non suffocating smoke.

Technical Data and Comparison of Current Carrying Capacity (amp) at 40ºC

Size mm	No. of Wire / Dia	Conductor		Insulation				
		Type	Grade	Primary	Secondary	Third	Final	Overall Dia. (mm)
0.75	24/0.20	Compact Bunched	Electrolytic Grade 99.9% Pure Copper	Protective Layer	High Current Polymer	Heat Resistant Polymer	Low Smoke (ZS) Polymer	2.50
1.00	14/0.30							2.70
1.50	22/0.30							3.10
2.50	36/0.30							3.65
4.00	56/0.30							4.10
6.00	84/0.30							4.80
10.00	80/0.40							6.30

*For current carrying capacity of 'FR' Grade, Ref.:3961 (1968

In case of outrageous fire PVC will burn & choke you to death. The black smoke will block your vision to exit. Habber from Hills cab emits low density smoke which is non-chocking. You can easily walk out. Pease request for a free demonstration from a authorized Hills habber distributor

CML-8597812 RoHS COMPLIANT | SAFE non suffocation low density smoke | CURRENT high current carrying capacity | HEAT internal excessive heat resistance polymer | 99.9% pure copper | FLAME RESISTANT

XLPE Power Cables

LT Cross-Linked Polyethylene (XLPE)

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LT CROSS-LINKED POLYTHYLENE (XLPE) POWER CABLES

LT 'HILLS' CROSS LINKED POLYTHYLENE (XLPE) INSULATED POWER CABLES

Hills Cab has developed a special grade XLPE compound to be used as the insulating material suitable for LT (upto 1100 volts) applications. This is a thermoset type of polymer enriched with cross linking agent. This is extruded over the conductor using modern extruder and is throughly cross linked under controlled conditions. This XLPE insulation overcomes the drawbacks of PVC, hitherto extensively used as an insulating material, without losing any of PVC's desirable properties.

Following are the advantages of XLPE Insulated Cables over that of PVC Insulated cables.

Higher Cureent Rating :

Withstands continuous conductor temperature of 90°C, whereas PVC withstands only 70°C, which means higher current carrying capacity.

- **Higher Overload Capacity :**

  XLPE cables can operate at 130°C, during emergency, unlike PVC Cables which cannot operate beyond 120°C. Thus in an emergency, the entire system need not go out of commission if some of the cables fail, because the other cables in parallel can carry a higher load.

- **Higher Short Circuit Rating :**

  Can withstand conductor temperatures of upto 250°C during short circuit - PVC cannot withstand more than 160°C.

- **Lighter weight, smaller bending radius :**

  Lighter weight, smaller bending radius that PVC enables installation of XLPE cables even in cramped space conditions. The cables require less support, thus lowering installation costs.

- **Lower Di-electric Constant and Power Factor :**

  Results in saving in power losses which means saving in costs, particularly for higher voltage.

- **Better Impact, Abrasion, Corrosion, Resistance :**

  Safer than PVC Cables against mechanical damage, abrasion and corrosion.

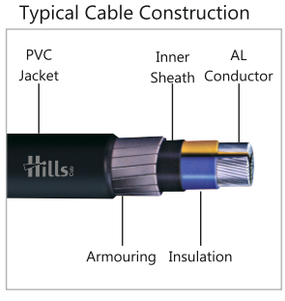
- **Easier Jointing and Termination :**

  Requires no special skills or equipment for jointing and termination.

Comparison of Properties

Properties		XLPE	PVC
Dielectric Constant		2.35	6 to 8
Dielectric Strength	KV/mm	22	14
Volume Resistivity at 27°C	Ohm-cm	10^{14}	10^{13}
Thermal Resistivity	°C cm/W	350	600
Power Factor at maximum Conductor Temperature		0.008	0.1
Normal Conductor Operating Temperature	°C	90	70
Emergency Overload Temperature	°C	130	120
Maximum Short Circuit Temperature	°C	250	160

Typical Cable Construction



QUALITY ASSURANCE

- At Hills Cab, Quality Assurance is ensured through planned, stage-wise quality checks.
  These quality checks are made starting from the raw material right through every stage of manufacturing.
- In particular, the property and specified test for XLPE compound is checked and the absence of contamination in the compound is noted against each batch of material received.

PVC Power & Control Cables

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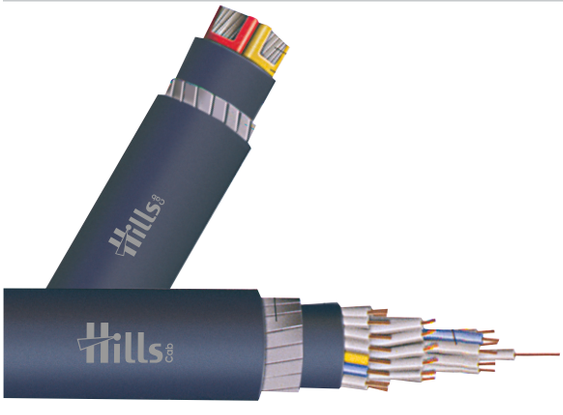
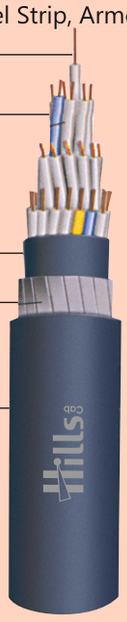


Typical Examples of Design & Construction As Per IS:1554

Power Cable
Steel Strip, Armoures

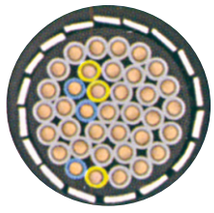
IS Specification		
Conductor : EC Grade Aluminium	**8130**	**Conductor :** High Conductivity, Grade Copper
Insulation : PVC Type A or C	**5831**	**Insulation :** PVC Type A or C
Inner Sheath : PVC Type ST1 or ST2	**5831**	**Inner Sheath :** PVC Type ST1 or ST2
Armour : Galvanised Steel Strip	**3975**	**Armour :** Galvanised Steel Strip
Outer Sheath : PVC Type ST1 or ST 2	**5831**	**Outer Sheath :** PVC Type ST1 or ST2

Control Cable
Steel Strip, Armored



Classification of PVC Compound

Type	Application	Max. Conductor Temperature
A	Insulation	70°C
C	Insulation	85°C
ST1	Sheath	70°C
ST2	Sheath	90°C



CORE IDENTIFICATION

For Power Cables and Control cables upto 5 cores the cores are identified by different colour as per IS : 1554

Single core	:	Red, Black, Yellow or Blue
2 CORE	:	Red and Black
3 CORE	:	Red, Yellow and Blue
3½ CORE	:	Red, Yellow, Blue and reduced neutral core in Black
4 CORE	:	Red, Yellow, Blue and Black
5 CORE	:	Red, Yellow, Blue, Black and Grey

Where the number of cores exceed 5, two adjacent cores are blue for reference and yellow for direction in each layer. The remaining cores in each layer are grey.

On specific request we can also provide core numbering for control cables.

PRODUCT CODE

As per IS:1554 / Part-I / 1988, the product is coded by alphabets :

Aluminium Conductor (No abbreviations are used for copper.)	A
PVC Insulation	Y
Steel round wire armour	W
Steel strip armour	F
Steel double round wire armour	WW
Steel double strip armour	FF
PVC outer sheath	Y
AI wire armour	AW

This product code is stenciled on the surface of the drum flange.

Note: Conductor construction classified as : I_e : single strand | r_m multi strand circular | s_m sector shaped

Note : The entire range of Power and Control cables can be supplied with Flame Retardant Low Smoke (FRLS) sheathing. These cables are also manufactured as per International Standards viz. BS 6346, IEC 60502, etc.

Modular Switches

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Customer first' has always been the core philosophy at Hills SWITCHES. From last few years the company has emerged as a premium brand in the modular switch industry. Hills Modular Switches are a preferred choice for homes, offices and the industry which has made it the fastest growing company in its industry.

Available in 8 sterling ranges, each Hills switch blends together the best of engineering with style and elegance. Manufactured in and ISO 9001 certified facility. The plant follows quality systems of Group Electrum, which are even more stringent than the standards prescribed by the Bureau of Indian Standards. Microprocessor machines have been installed here to ensure high levels of precision and consistent quality during production cycles. Also, a full ten year warranty is offered on the entire range of switches.

High professionalism & product quality with the backup of international research have made Hills a distinguished company indeed. Production here is a symbiosis between advanced technology, maximum functionality and aesthetic designing to match the taste of the discerning clientele. The state-of-the-art plant is a unique fusion of the best human and technical resources.

Today, Hills is committed to meeting the challenges of the new economy through business ethics, global reach and technological expertise.

Hills Sockets utilises the Tunnel-8 Technology which combines the inherent elasticity of phosphor bronze with state of the art design to create the ultimate in multi-point contact sockets. The uniquely designed spring loaders guarantee

(a) Maximum contact area
(b) Lifetime elasticity
(c)power loss.

Hills Modular Plates come in the largest range of colours, textures and finishes to blend with any decor

The highest contact pressure
The fastest make- and-break
Minimum milli-volt drop.
Minimum contact bounce.

Switch Gears

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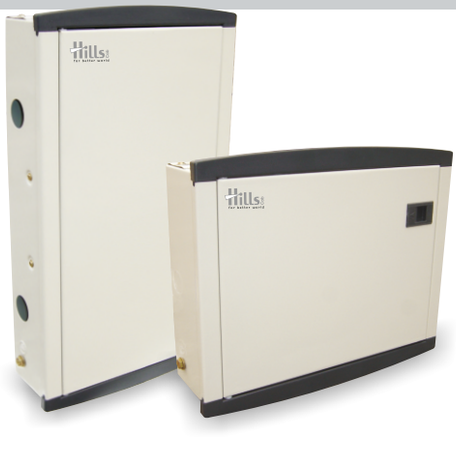

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Electric Fans

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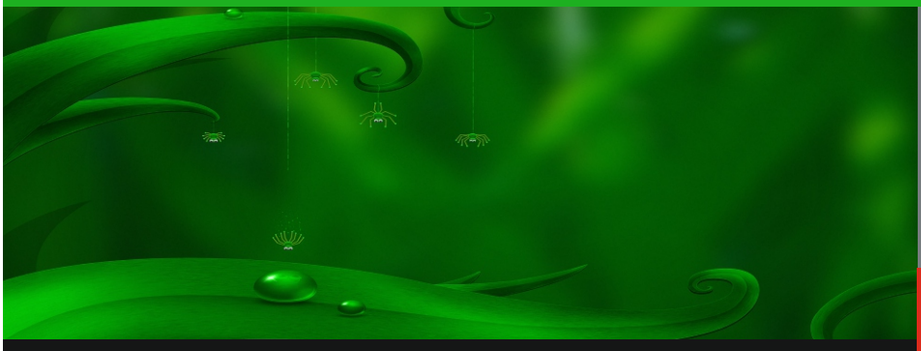
3-Core Flat Cables



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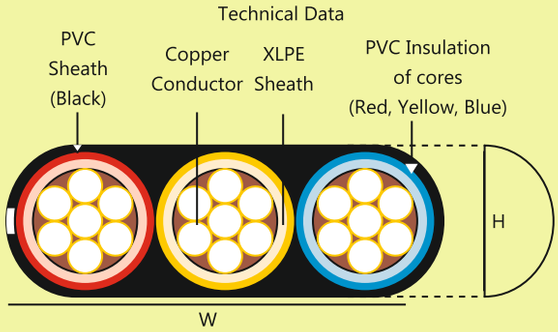
Description & Features of Submersible Wire

General purpose flat submersible pump cable. Copper stranding covered with a tough PVC insulation applied directly over the conductors. A thin, integral web between conductors assures easy separation to facilitate installation, yet provide flexibility and mechanical protection.

Technical Data



3 Core Flat Cables as per ISI:694:1990 with ISI Mark

Note :
The strand diameter is nominal however, construction of conductor is design to satisfy the requirements of conductor resistance as per IS:8130:1984
* As per conductor class 2 of IS:8130:1984
** As per conductor class 5 of IS:8130:1984

Conductor		Insulation		Sheath Overall Dimensions			Conductor Resistance @ 20℃ (Max.) Ohm / Km	Current Carrying Capacity @ 20℃ (Amp.)
Area (Nom.) Sq. mm	No. / Size of Wires mm	Thickness (Nom.) mm	Core Dia. (Nom) mm	Thickness (Nom.) mm	Width 'W' mm	Thickness 'T' mm		
1.5	22/0.3	0.8	3.25	1.15	12.5	5.8	12.10	14
2.5	36/0.3	0.9	3.90	1.15	14.4	6.3	7.41	18
4.0	56/0.3	1.0	4.65	1.15	17.2	7.4	4.95	26
6.0	84/0.3	1.0	5.20	1.15	18.7	7.9	3.30	31
10.0	140/0.3	1.0	6.60	1.40	23.7	9.9	1.91	42
16.0	226/0.3	1.0	8.20	1.40	28.0	11.4	1.21	57

Submersible Cable Selection Chart (For 415 V. 50Hz. A/C Power Supply)

FL. Current (Amp.)	Motor Rating		Cable Size in Square mm							
	KW	HP	1.5	2.5	4.0	6.0	10.0	16.0	25.0	35.0
			Maximum length of Cable in Meters							
2.75	0.75	1	262	437	705					
3.25	1.1	1.5	222	370	596					
4.5	1.5	2	160	267	430	895				
6.5	2.2	3	111	185	298	646	773			
8.5	3.0	4	84	141	228	447	590	933		
10	3.7	5	72	120	193	342	502	793		
12	4.5	6	60	100	161	290	462	661		
14.5	5.5	7.5 Dol		82	133	242	346	547		
14.5	5.5	7.5 SD	86	143	231	200	600	947		
18	6.7	9	69	115	186	347	483	763		
19.5	7.5	10	64	106	172	279	446	704		
25	9.3	12.5		83	134	258	348	549	852	
29	11	15		71	115	201	300	473	735	
34	13	17.5			98	173	256	404	626	882
39	15	20			86	148	222	352	546	769
43	18.5	25			78	129	202	319	495	697
52	22.5	30				117	167	264	409	577

(For 220 V. 50Hz. A/C Power Supply)

FL. Current (Amp.)	Motor Rating		Cable Size in Square mm							
	KW	HP	1.5	2.5	4.0	6.0	10.0	16.0	25.0	35.0
			Maximum length of Cable in Meters							
4.5	0.37	0.5	160	267	430	646				
5.4	0.55	0.75	133	222	359	538				
6	0.75	1	120	200	323	484	837			
9.5	1.1	1.5	75	126	204	306	529	835		
13	1.5	2	92	92	149	223	386	610	946	
20	2.2	3		60	96	145	251	396	615	866
28	3.7	5			69	103	179	283	439	618

Telephone & Switchboard Cables

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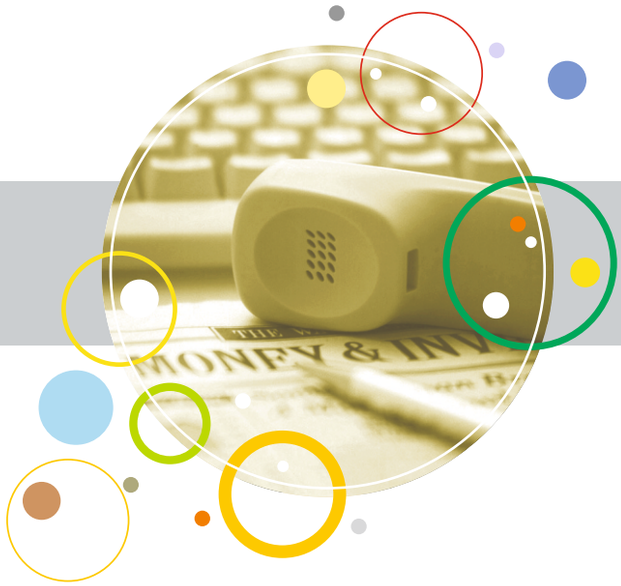

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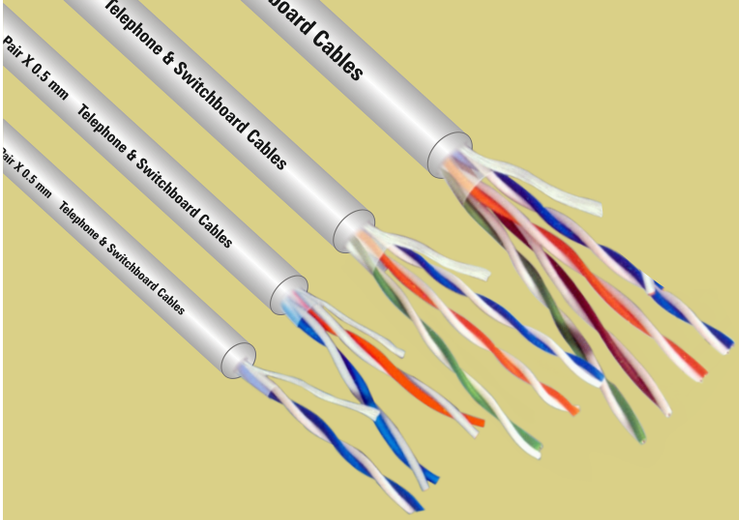

Effective communication plays a vital role in the economic growth of any country. Keeping this in mind, HILLS CAB is the pioneer company in India to enter the Telecommunication field by manufacturing polyethylene insulated Jelly Filled Telephone Cables (PIJF).

Each conductor consist of a solid bare round wire of annealed high conductivity copper, smoothly drawn with uniform diameter and resistance. It is insulated with either solid medium/high density polyethylene of Foam Skin polyethylene insulation. The conductor is insulated uniformly in various colours with extremely tight tolerances to help the cable meet the electrical and transmission requirements of specification.

Individual insulated conductors are twisted together with a uniform lay to form a pair. The length of the lay of each pair is different from that of the adjacent pair to enable the cable to meet the capacitance unbalance, attenuation and cross talk requirements of the specifications. The pairs have specific colour combination for easy identification.

The twisted pairs are stranded in a single unit of 10, 20 and 25 pairs and wrapped helical with an identification colour binder. For higher pairage cable, a number of units are stranded together to form a super unit. a coloured identification binder is wrapped around the super units for easy identification.

These units or super units are then laid up to form the core of the cable. During this operation a water-resistant filling compound is introduced to fully fill the interstices of the laid up core. This filling compound acts as a dielectric between the layers and the moisture barrier. The Jelly Filled laid up Cable is then covered with a layer of non-hygroscope polyester tape to pack the jelly. This also acts as a mechanical protection to the cable core, and acts as a dielectric.

Construction

Conductor		Insulation			Rip Cord	Sheath	
Material	Nominal Diameter (mm)	Material	Nominal Thickness (mm)	Nominal Dia of Insulated Conductor (mm)	Material	Material	Minimum Thickness (mm)
Bright Annealed Pure Electrolytic Copper	0.50	HDPE	0.20	0.95	Nylon	FR PVC with high oxygen and Temperature index	1 Pair 0.50 2-8 Pair 0.65 10 Pair 0.75

Colour Combination

No. of Pairs	2 Pair	2 Pair
Pair No. 1	White - Blue	White - Blue
Pair No. 2	White - Orange	White - Orange
Pair No. 3		White - Green
Pair No. 4		White - Brown
Pair No. 5		White - Grey

Electrical Parameters

Conductor Resistance	Max. 92.20 ohm / km at 200C
Mutual Capacitance	Max. 50 nf/Km
Insulation Resistance in Air	Min. 10000 M-ohm/km
Capacitance Unbalance Pair to Pair	Max. 250 pf/100 m

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Hills Cab a One Stop Shop for all electrical needs.

- *Delivering value through global experiences.*
- *Customer Satisfactions with focused approach.*
- *Laced with long-lasting partnerships*

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Meet additional requirement of international standards

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