

PAWAN-CAB

Energising the future

Company Profile

Pawan Power & Telecom Ltd., (Formerly known as Pawan Power Products (P) Ltd.) was established in 1987. The company has manufacturing facilities located in the industrially advanced and peaceful state of Andhra Pradesh. This facilities are located in S.V.C.I. (IDA Bollaram), within easy reach of the State Capital, Hyderabad. And as such well connected by road, rail and airways.

Pawan Power & Telecom Ltd., has a well established production line, modern and latest quality control facilities for various types of Cables, Conductors and AB Cables Strict process quality control is maintained at every stage of production, from purchasing of raw-material to finished products. The following standards are followed for raw-material at the manufacturing stage/process. IS:14255, IS:7098, IS:8130, IS:6474, IS:3975, IS:398, ASTM:2863, IEC:754-1, 339-1, 540-1, SS:424-1475, IRS:63-83, 35-70 AND IEEE:383. Overall the cables and conductors confirm to their respective IS.

Pawan Power & Telecom Ltd., is supported by well planned utility and offsite facilities. This includes in house wire drawing, annealing, tinning, bunching, stranding, armouring, screening, taping, and layingup facilities. This also includes well equipped PVC processing machines for insulation, inner sheath and outersheath, and a complete compounding machine for PVC granules. The utility and offsite facility covers water storage, electrical transformers, air compressors, generating sets and material handling facilities. The plant is supported with complete workshop and die room for ensuring adequate maintenance and updation of machinery. The testing and quality controlling section offers complete facility to carry out all routine and type test as per Indian and International Standards, from raw-material stage to finished goods.

Pawan Power & Telecom Ltd., has manufactured and supplied high quality products to various State Electricity Boards, Power Houses, utility companies and various departments and organisations like Defence Railways, Coalfields, Space Centres, Port Trusts, Heavy engineering and cores industries both in Government and Private sectors.

Pawan Power & Telecom Ltd., has undertaken as extensive modernisation, updation and expansion programme to expand its product line and to provide technically improved products and services.

"OUR COMMITMENT TO THE NATION"

A: FIRE ACCIDENT IN KOTHAGUDEM THERMAL POWER STATION KOTHAGUDEM (A.P.)

Our company has accepted the challenge by manufacturing and supplying 50 Kms of Copper Control Cables with FRLS properties in a record time of 18 days for restoration of power generation by KTPS

B: RESTORING OF POWER IN T-SUNAMI EFFECTED AREAS OF ANDAMAN AND NICOBAR ISLANDS:

To serve the nation at the time of need and considering the severity of the havoc, the company, has accepted the challenge and on top most priority/war footing basis has manufactured and supplied 100 KM of XLPE insulation LT A.B Cable of various sizes in a record time of 25 days to Power Grid Corporation of India Ltd. for their relief operations at Andaman and Nicobar Islands under the directives of the Ministry of Power, Govt. of India, for restorations of power system which was totally disrupted due to T-Sunami tidal waves.



PAWAN - CAB

PRODUCT RANGE

- PVC / HRPVC / XLPE / FRLS / FR POWER & CONTROL CABLES
- FLAT / ROUND SUBMERSIBLE CABLES
- FLEXIBLE CABLES / CORDS (FR / HR / FRLS / HFFR PVC)
- MINING CABLES UPTO 3.3 / 3.3 K.V.
- AERIAL BUNCHED CABLE and ITS ACCESSORIES
- ACSR, AAC & AAA CONDUCTOR
- SCREEN CABLES
- DATA CABLES
- TELEPHONE CABLES

PAWAN POWER & TELECOM LIMITED

Corporate Office:/Regd.Office:

204, Ashoka Plaza, 10-1-126,
Masab Tank, Hyderabad – 500 004 (T.S.)
Tel # 23392793, 66661400, 66626500,
e-mail : pawancab@pawancab.com
www.pawancab.com

Works :

141/1, IDA Bollaram
PIN-502 325.
Tq. Nasarapur,
Sanga Reddy Dist. (T.S.)
Tel # 8340802000

Year of Eastablishment : 1987

Constitution of Firm : Limited Company

Permanent SSI Regn.No. : 01 14 02865 PMT/SSI dated 30.03.1988

Permanent NSIC Regn. No. : NSIC/HYD/GP/RS/17 (P-116)/2013 Dated 12.07.2019

Name of Directors :

Sri Suresh Kumar Lakhota
Executive Director

Sri Pawan Kumar Lakhota
Executive Director

Smt. Yasoda Devi Lakhota
Director

Contact Persons :
At Office : Sri Pawan Kumar Lakhota
At Works : Sri Suresh Kumar Lakhota

Name of the Bankers : YES BANK LTD,
Begumpet Branch,
Secunderabad– 500 003.

ISI Licence Nos. :

CM/L-6690687

IS:14255



for L.T. Aerial Bunched Cables

CM/L-4417760

IS:7098



(Part-I)

for XLPE Insulated Thermo Plastic sheathed cables

CM/L - 3426352

IS:398



(Part-IV)

for All Aluminum Alloy Conductor

GST No. : 36AABCP2321B1Z5

DGFT IEC CODE : 0906012163

PRESTIGIOUS CUSTOMERS

A. ELECTRICITY BOARDS / UTILITIES COMPANIES

- Andhra Pradesh State Electricity Board
 - ➔ A.P. Transmission Corporation Ltd.
 - ➔ A.P. Power Generation Corporation Ltd.
 - ➔ A.P. Central Power Distribution Company Ltd.
 - ➔ A.P. Southern Power Distribution Company Ltd.
 - ➔ A.P. Northern Power Distribution Company Ltd.
 - ➔ A.P. Eastern Power Distribution Company Ltd.
- Andaman Electricity Board
- Gujarat Electricity Board
- Kerala Electricity Board
- Karnataka Electricity Board
- Maharashtra State Electricity Board
- Orissa State Electricity Board
 - ➔ Grid Corporation of Orissa Ltd.
 - ➔ Western Electricity Supply Company of Orissa Ltd.
 - ➔ Southern Electricity Supply Company of Orissa Ltd.
 - ➔ Central Electricity Supply Utility of Orissa Ltd.
- Punjab State Electricity Board
- NTPC Electric Supply Co. Ltd.
- Power Grid Corporation of India Ltd.
- Rajasthan State Electricity Board
- Tamil Nadu Electricity Board

B. GOVT. PROJECTS

- Kothagudem Thermal Power Station - A.P.
- Karnataka Power Corporation Limited - Karnataka
- Lower Sileru Power Projects - A.P.
- Mangalore Super Thermal Power Project - Karnataka
- National Thermal Power Corporation.
- Nagarjuna Sagar Hydro Electric Scheme - A.P.
- Rayalseema Thermal Power Station - A.P.
- Raichur Thermal Power Station, Karnataka
- Ramagundam Thermal Power Project - A.P.
- Singur Hydro Power Projects - A.P.
- Srisailem Hydro Electro Scheme - A.P.
- Viayawada Thermal Power Station - A.P.

B. Pvt. PROJECTS

- ABB Limited
- Annapurna Constructions & Transmission
- BSES Ltd.
- Bharat Heavy Electricals Ltd.
- B. Srinivasa Rao Power Constructions Ltd.
- ECI Engg. & Construction Co. Ltd.
- En En Elec. Engg. Pvt. Ltd.
- HPC Electricals Limited
- ICSA (India) Ltd.
- Icomm Tele Ltd
- Nagarjuna Construction Company Ltd.
- Shyama Power India (P) Ltd.
- Shirdi Sai Electricals
- Tata Projects Ltd.
- Tulasi Projects Pvt. Ltd.
- Techno Electric & Engg. Co Ltd.
- Vijai Electricals Ltd.
- Variegate Projects Pvt. Ltd.

C. STATE GOVERNMENT DEPARTMENT

- A.P. Panchyat Raj Department
- A.P. State Irrigation Development Corporation
- A.P. State Industrial Infrastructure Development Corporation
- A.P. Public Works Department, Road & Building
- A.P. Health & Medical Housing Infrastructure Development Corpn.

D. BUILDERS & CONSTRUCTION COMPANY

- Amsri Builders
- Apuroopa Builders
- Ashoka Builders
- Bhavani Builders & Real Estate
- Chaitanya Engineers & Constructions
- Engineer's Syndicate India (P) Ltd.- Bangalore
- Himagiri Construction (P) Ltd.
- Hurricane Constructions
- IVR Constructions
- Indus Construction - Rajamundry
- Jayabheri Group
- Janpriya Engineer Syndicate
- K.K. Constructions
- Lahri Estates
- Linkwell Construction - Vijayawada
- Nirmal Constructions
- Nagarjuna Enclave
- Parnika Constructions (P) Ltd.
- Pulsar Constructions (P) Ltd.
- P.N. Raju & Co.
- Raghu Constructions
- Roopa Power Technology (P) Ltd.
- Subhodya Projects Ltd.
- Shruthi Constructions
- Sri Amrutha Construction - Rajamundry
- Satyaprabha Constructions
- Sri Vijeta Power System
- Sri Venkateshwara Builders
- Triveni Constructions Ltd.
- Vidhya Developers & Builders (P) Ltd.
- Vasantha Estates
- Vijaymaduri Builders - Amalapuram

E. OTHERS

- Anjani Portland Cement Ltd.
- Aditya Associates (Bangalore)
- Achariya Nagarjuna University
- Co-op. Electric Supply Society, Sirsilla
- Chennai Port Trust
- C.H. Marthand Rao & Co.
- Department of Atomic Energy
- Directorate General of Supplies and Disposals
- Elmech Enterprises
- Energy Leader Batteries Pvt. Ltd.
- Flameproof Equipments Pvt. Ltd.
- Godavari Drugs Ltd.
- Hindustan Photo films Ltd.- Ooty
- Hindustan Aeronautic Ltd.- Bangalore.
- Integral Coach Factory, Madras
- Krishna Chaitanya Electricals & Constructions
- KCP Limited
- Manganese Ore (India) Limited
- Manchukonda Prakasam Co.
- Orient Cement Ltd.
- ONGC - Rajamundry
- Pavani Controls & Panels Ltd.
- Ramoji Film City / Usha Kiron Movies
- Ratna Cement
- Rayalseema Alkalies & Allied Chemical Ltd.
- Ramkay Engineers & Consultants
- Raghavendra Industries
- Royal Engineering & Constructions
- Raghava Estate (P) Ltd.
- Singareni Collieries Company Limited
- Sanjay Rural Electric Supply Company
- Sindhu Escon Ltd.
- Sree Rayalseema Hi-strength Hypo Ltd.
- Satya Maharshi Power Corporation Ltd.
- Sujala Pipes Ltd. / Nandi Pipes Ltd.
- Shanti Electricals
- Skol Breweries Ltd.
- Safex (India) Ltd.,
- The Mula Pravara Electric Co-op. Society Ltd., Maharashtra
- The Rayachoty Rural Electric Co-operative Society Ltd. Rayachoty.
- The Hukari Taluka Co-op Rural Electric Society Ltd., Hukari
- The Surat Electricity Company Limited.
- The Sirpur Paper Mills Ltd.
- Tirumala Tirupathi Devasthanams
- Vikram Sarabhai Space Centre
- Visakhapatnam Port Trust
- Western Coalfields Limited

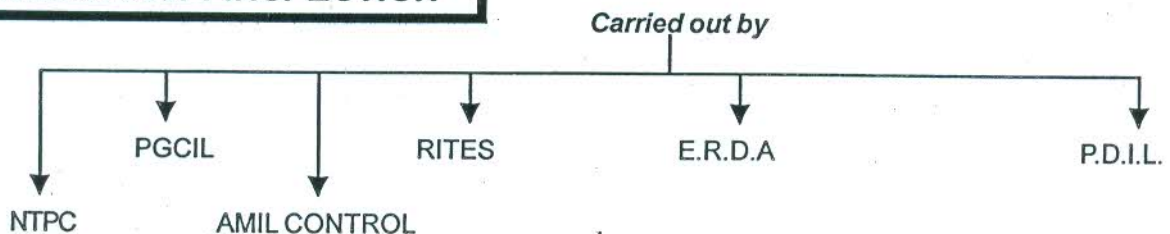
VENDOR REGISTRATIONS

- APSEB, TNEB, RSEB, GEB, PSEB, KEB, ONGC, KSEB
- A.P. Public Works Department (Roads & Building)
- APSIDC, APSIIC, APHMHIDC – Hyderabad
- Airport Authority of India – Chennai
- Bharat Heavy Electricals Limited - Hyderabad
- BSES Limited – Hyderabad
- Bharatiya Reserve Bank Note Mudran Ltd., Mysore
- Chennai Port Trust
- Dept. of Atomic Energy
- Heavy Engineering Corporation Limited. – Ranchi
- Neyveli Lignite Corporation – Neyveli
- National Metallurgical Laboratory – Jamshedpur.
- Panchayatraj Department – Hyderabad
- Power Grid Corporation of India Ltd.- Gurgaon
- Tata Consultancy Services – Hyderabad
- Tirumala Tirupati Devasthanams-A.P.

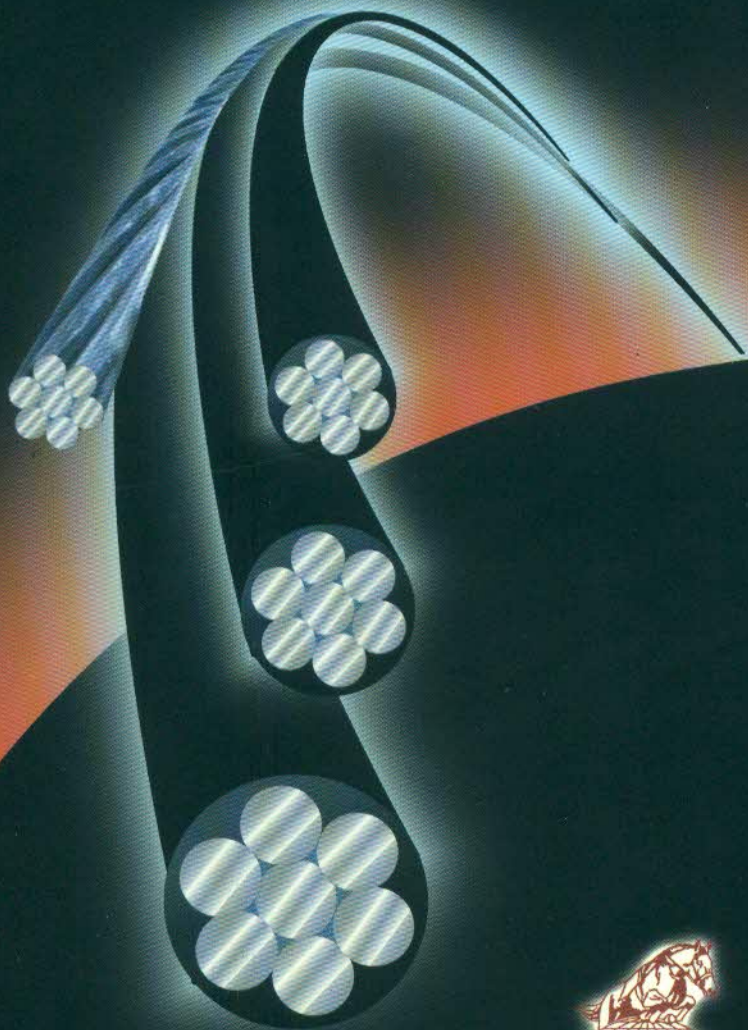
PRODUCT TEST CONDUCTED AT RECOGNISED GOVT. LABS

- Central Institute of Plastic Engineering & Technology (CIPET) – Hyderabad
- Central Electrical Testing Laboratory (CETL) – Kakkalur (Tamilnadu)
- Department of Industries Haryana Govt. Quality Marking Centre – Faridabad
- Electronic Research & Development Association (ERDA)- Vadodra
- Electronic Test & Development Centre (ETDC) – Hyderabad
- Field Testing Laboratory (FTL) – Hyderabad
- Industrial Testing & Development Laboratory (ITDL) – Hyderabad
- National Test House (NTH) – Chennai
- Delhi Test House (DTH) – New Delhi

THIRD PARTY INSPECTION



*Aerial Bunched Cables for LT Lines
Life Lines for a Powerful World.*



PAWAN - CAB

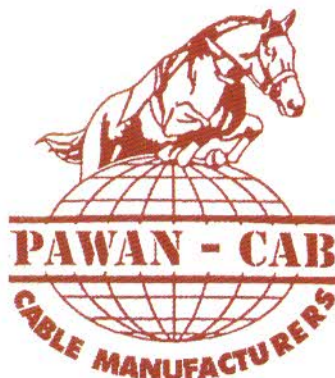
Energising the future

Energising the future with a vision

Pawan Power & Telecom Limited are the manufacturer for various type of wires, cables & conductors. "Things happen only when people dream of a better tomorrow is our belief, our strength. At *Pawan Power & Telecom Limited* employing the latest technology means, providing consistent, quality products, at the speed of the changing needs of the industry. "Pawan-Cab", today, is a brand that has virtually redefined Quality and Efficiency in wires, cables and conductors. Different types of wires, cables and conductors for different environments and for various types of industries, have put *Pawan Power & Telecom Limited* at the cutting edge in Power sector in India.

Aerial Bunched Cables for LT Lines is yet another product from "*Pawan Power & Telecom Limited*" stable that makes safety and security in cabling for mass power supply not just the focus, but the very hallmark of the cabling. It's a new revolution in power supply, minus the hazards of power theft and power tripping.

Pawan Power & Telecom Limited are the pioneers in manufacturing L.T. Aerial Bunched Cables in the state of Andhra Pradesh and regular suppliers to various electricity Boards like A.P.S.E.B., R.S.E.B., GRIDCO & Public Sector undertakings like B.S.E.S. Limited, Singareni Collieries Company Limited etc.



'PAWAN-CAB' AERIAL BUNCHED CABLES FOR LT LINES

FOREWORD

Many countries are now increasingly using insulated conductors for LT overhead lines. This system is commonly called ABC system (AERIAL BUNCHED CABLES).

In the ABC system, the insulated aluminium conductors (3 or 4 numbers, as required) are twisted around a high strength aluminium alloy bare/insulated conductor, which carries the main weight and also serve as the earth-cum-neutral wire. The phase conductors are not under tension.

GENERAL

The Phase & Street lighting Conductors shall be insulated with Black weather resistant polyethylene suitable for 1100 V reading. If desired, We can also provide Cross Linked Polyethylene (XLPE) Insulation on an optional basis.

ADVANTAGES

- The system is safe and practically fault-free, consequently, interruptions of supply are minimised and transformer failures are considerably reduced as these are not subjected to frequent faults. This is a major advantage as the present rate of failure of transformers is very high.
- The height and strength of poles is reduced. Till special low-height poles are developed, 7.5 M standard poles can be used instead of 8 M poles. Due to lower tension, the number of poles per km is also less. Apart from direct reduction in cost, the transportation cost of poles is also reduced, which is of particular significance in hilly and other difficult areas where transportation costs are heavy.
- The maintenance costs are considerably reduced.
- Chances of theft of electricity by direct tapping of bare conductors are eliminated.
- The insulated conductors are more suitable for narrow streets in villages/town where bare conductors cannot be easily used for want of adequate clearance. Insulated conductors can also be taken along the houses, where necessary.
- The problem of tree-clearance is minimised. Hence, is nature friendly.
- For street lighting conductor, provision is made for 16 mm sq. conductor in the Bunched Conductor system. Whereas in the present system higher conductor sizes viz. Squirrel/Ghat (20 mm sq./25 mm sq. aluminium area) have to be used. This is possible because, in the insulated system, the phase/street light conductors are not in tension. In fact, all the conductors can be of 16 mm sq. size, which will be more economical for many backward areas where load density is low but where higher conductor section. (20/25 mm sq.) has to be used at present.
- With the direct reduction in cost due to use of shorter and lesser number of poles, elimination of insulators / D-straps and use of smaller sizes of conductors explained above, the overall cost of the system is practically the same as the present system; but at the same time many other technical and indirect economic advantages are obtained as indicated above.

SCOPE

The Specification covers the requirements of polyethylene/cross linked polyethylene insulated aluminium conductor twisted over a central bare/insulated aluminium alloy messenger wires for use on L.T. overhead lines.

RATED VOLTAGE

The cable covered in this specification are suitable for use on 3 phase, AC, (earthed/un-earthed system) for rated voltage upto including 1100 v. Unless otherwise stipulated in this specification, the following standards shall be applicable.

I.	IS: 7098-(Pt-I)	- 1978	:	Cross linked polyethylene insulated cables 1100 Volts.
II.	IS: 8130	- 1984	:	Conductors for insulated cables.
III.	IS: 6474	- 1984	:	Polyethylene insulation of cables.
IV.	IS: 398-(Pt-IV)	- 1994	:	(Part-IV) Aluminium Alloy conductors.
V.	IS: 10810	- 1984	:	Methods of test for cables.

CONSTRUCTION

The insulated phase conductors (with additional street lighting conductors, if provided) shall be twisted around the bare/insulated aluminium alloy messenger wire, which will take all the mechanical stress. The messenger wire shall also serve as the earth-cum-neutral wire.

MESSANGER (NEUTRAL CONDUCTORS)

1. The bare/insulated messenger wire shall be made of aluminium alloy, generally conforming to IS:398 (Part-IV) 1994 composed of 7 strands and shall be suitably compacted to have smooth round surface to avoid damage to the polyethylene insulation of the phase conductors twisted around the messenger.
2. There shall be no joints in any wire of the stranded messenger conductor except those made in the base rod or wires before final drawing.
3. The sizes and other technical characteristics of the messenger will be provided on request.

PHASE CONDUCTORS

1. The phase conductors and street lighting conductors shall be insulated with black weather resistant, polyethylene /XLPE suitable for 1100 V rating.
2. The phase conductors shall be suitably compacted.
3. The phase conductors shall be provided with one, two and three 'ridges' for core identification as shown in fig.
4. The tensile strength of aluminium wire used in the conductors shall not be less than 90 N/mm²
5. The standard size and technical characteristics of the phase and street lighting conductors will be provided on request.

1. POLYETHYLENE INSULATION

Test	Requirement
Melt Flow Index	: 3 or less
Tensile Strength	: Min, 10 N/mm ²
Percentage Elongation	: Not less than 300%
Carbon Black Content	: Between 2 & 3
Vicat Softening Point	: Not less than 85°C
Volume resistivity :	
At 27°C	: 1×10^{15} Ohm.Cm (min)
At 70°C	: 1×10^{13} Ohm.Cm (min)

The Polyethylene insulation shall generally confirm to IS:6474-1984. The following properties shall be guaranteed by us:

3. THICKNESS OF INSULATION AND TOLERANCE

Test	Requirement
Nominal Area of Conductor	Nominal Thickness (t_i)
mm ²	mm
16	1.2
25	1.2
35	1.2
50	1.5
70	1.5
95	1.5

The smallest of measured values of thickness of insulation shall not fall below the nominal value (t_i) specified in above table by more than $0.1 \text{ mm} + 0.1 (t_i)$.

2. PROPERTIES OF XLPE INSULATION

Sl.No.	Tests	Requirements	
i)	Tensile strength	12.5 N/mm ² , Min	
ii)	Elongation at break	200 percent, Min	
iii)	Ageing in air oven:		
	a) Treatment : Temperature	135 ± 3°C	
		Duration	7 days
	b) Tensile Strength variation	± 25 percent, Max	
	c) Elongation variation	± 25 percent, Max	
iv)	Hot set :		
	a) Treatment : Temperature	200 ± 3°C	
		Time under load	15 min
		Mechanical stress	20 N/cm ²
	b) Elongation under load	175 percent, Max	
	c) Permanent elongation (set) after cooling	15 percent, Max	
v)	Shrinkage :		
	a) Treatment : Temperature	130 ± 3°C	
		Duration	1 hour
	b) Shrinkage	4 percent, Max	
vi)	Water absorption (Gravimetric)		
	a) Treatment : Temperature	85 ± 2°C	
		Duration	14 days
	b) Water absorbed	1 mg/cm ² , Max	
vii)	Volume resistivity		
	a) at 27°C	1 x 10 ¹⁴ ohm-cm, Min	
	b) at 90°C	1 x 10 ¹² ohm-cm, Min	

PROCESS FLOW CHART FOR MANUFACTURING OF AERIAL BUNCHED CABLES

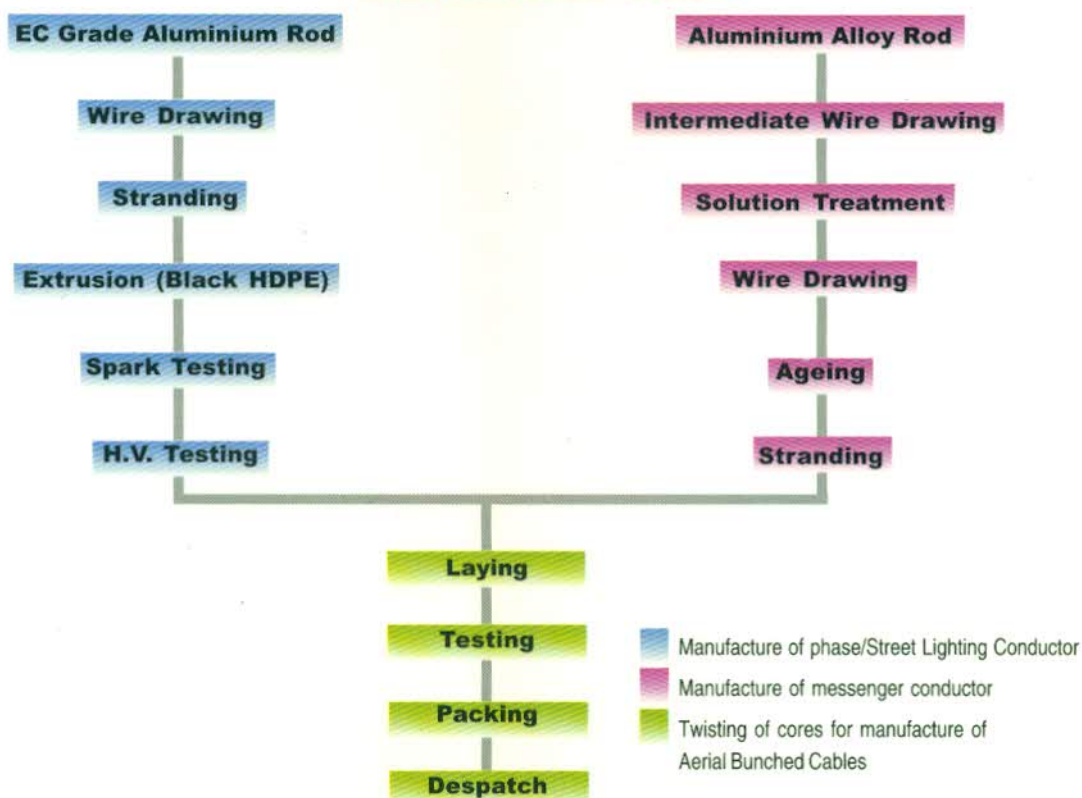
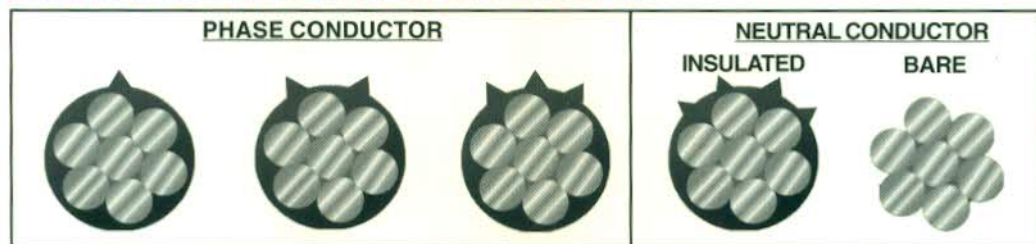


FIGURE SHOWING CORE IDENTIFICATION



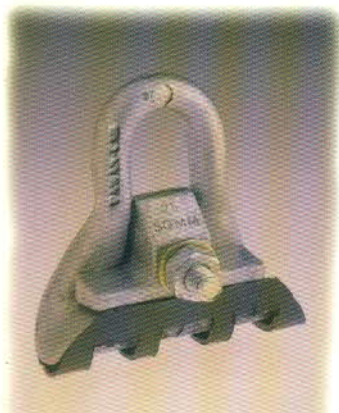
SIZE AND REQUIREMENTS OF MESSENGER CONDUCTOR

Sl.No.	Nominal Cross Sectional Area of Phase Conductor	Messenger Conductor		
		Nominal Cross Sectional Area	Maximum dc Resistance	Maximum Breaking Load
			at 20°C	
	mm ²	mm ²	ohm/km	kN
i)	16	25	1.38	7.0
ii)	25	25	1.38	7.0
iii)	35	25	1.38	7.0
iv)	50	35	0.986	9.8
v)	70	50	0.689	14.0
vi)	95	70	0.492	19.7

'PAWAN-CAB' ACCESSORIES FOR AERIAL BUNCHED CABLES



DEAD END CLAMP



SUSPENSION CLAMP



LT CONNECTOR

DEAD END CLAMP

Dead End Clamp is also made of Aluminium Alloy for greater strength. Dead end clamp is used at the starting and at terminal point of the conductor. The clamp is designed in such a way that it automatically grips the messenger wire due to tension of wire.

SUSPENSION CLAMP

Suspension clamp is made of Aluminium Alloy to take the load of conductor, suspension clamp is used on every pole and is used for hanging the cable without suspension clamp AB Cable cannot be hanged.

L.T. CONNECTOR

L.T. Connector are made of Aluminium Alloy. The connector are suitable for holding main conductor /tap conductor of compacted diameter. The connector are also used for jointing of conductor, the connector is covered with block weather resistance insulated cover made of polyethylene to avoid short circuit and corrosion. For detail information on LT AB cable accessories the same will be provided on request.



PAWAN POWER & TELECOM LIMITED

Office : 204, Ashoka Plaza, 10-1-126, Masab Tank, Hyderabad-500 028.

Phone : 3392793, 3301694, 6506503 ; **Fax :** 040-3394427

Grams : PAWANCAB, **E-mail :** pawancab@satyam.net.in

Works : Plot No.141/1, S.V.C.I. Estate, Village Bollaram, Tq.Narsapur,
Dist. Medak (A.P.), **Phone ;** 91279379

Authorised Distributors/Dealers



PAWAN-CAB

POWER & CONTROL CABLES



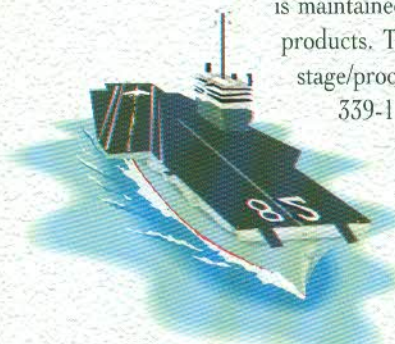
'PAWAN-CAB' ENERGIZING THE FUTURE



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PAWAN POWER & TELECOM LTD., has undertaken as extensive modernisation, upadation and expansion programme to expand its product line and to provide technically improved products and services.

TABLES I TO V : ALUMINUM CONDUCTOR, PVC INSULATED, PVC SHEATHED CABLES

TABLE I : PAWAN - CAB 1 Core, Unarmoured(AYY)/Armoured(AYAWY) Cables - 650/1100 Volts

Nom. Cross Sectional area	Unarmoured			Armoured			Max.DC		A.C. Current Rating							
	Nom. Thickness of PVC insulation	Approx. Overall Dia	Approx. Weight	Nom. Thickness of PVC insulation	Nom. Dia of Alu. wire for Armour	Approx. Overall Dia	Approx. Weight	Conductor Resistance at 20 DegC	In Air				In Ground			
									GPPVC		HRPVC		GPPVC		HRPVC	
									insulation	insulation	insulation	insulation	insulation	insulation	insulation	insulation
Sq. mm.	mm.	mm.	Kg/km	mm	mm	mm	Kg/km	Ohm/km	2 Cables	3 Cables	2 Cables	3 Cables	2 Cables	3 Cables	2 Cables	3 Cables
2.5	0.9	7.0	66	1.2	1.4	10.8	115	12.100	25	21	30	26	28	24	33	28
4.0	1.0	7.8	75	1.3	1.4	11.5	126	7.4100	32	27	38	33	36	31	41	35
6.0	1.0	8.4	90	1.3	1.4	12.2	164	4.6100	41	35	50	42	44	39	52	46
10	1.0	9.2	110	1.3	1.4	13.0	197	3.0800	56	47	69	57	59	51	69	60
16	1.0	10.7	140	1.3	1.4	14.1	238	1.9100	72	64	88	78	75	66	88	77
25	1.2	11.7	190	1.5	1.4	16.0	295	1.2000	99	84	121	103	97	86	112	101
35	1.2	13.5	255	1.5	1.4	17.2	350	0.8680	120	105	146	129	120	100	140	117
50	1.4	15.0	320	1.7	1.4	18.7	466	0.6410	150	130	184	158	145	120	170	140
70	1.4	16.7	407	1.7	1.4	20.0	550	0.4430	185	155	226	190	170	140	199	163
95	1.6	19.0	525	1.9	1.6	23.0	732	0.3200	215	190	264	233	205	175	240	205
120	1.6	20.8	625	1.9	1.6	25.0	820	0.2530	240	220	292	270	230	195	268	228
150	1.8	23.0	725	2.1	1.6	26.2	950	0.2060	270	250	330	305	265	220	310	258
185	2.0	25.0	920	2.3	1.6	28.5	1151	0.1640	305	290	374	356	300	240	351	278
240	2.2	28.0	1125	2.5	1.6	31.9	1429	0.1250	350	335	430	410	335	270	392	316
300	2.4	31.0	1400	2.8	2.0	35.5	1784	0.1000	395	380	484	464	370	295	434	345
400	2.6	35.3	1710	3.0	2.0	40.0	2226	0.0778	455	435	557	534	410	325	480	378
500	3.0	38.0	2100	3.4	2.0	43.0	2671	0.0605	490	480	600	589	435	345	510	403
630	3.4	44.0	2750	3.9	2.0	49.0	3337	0.0469	560	550	680	674	485	390	565	456
800	3.4	48.5	3360	3.9	2.5	54.0	4210	0.0367	640	630	794	785	530	440	620	515
1000	3.4	54.0	4115	3.9	2.5	58.0	5124	0.0291	740	720	895	800	580	490	680	570

TABLE II : PAWAN - CAB 2 Core, Unarmoured(AYY)/Armoured(AYWY & AIFY) Cables - 650/1100 Volts

Nom. Cross Sectional area	Unarmoured			Armoured			Max.DC		A.C. Current Rating			
	Nom. Thickness of PVC insulation	Approx. Overall Dia	Approx. Weight	Nom steel Armour size	Approx. Overall Dia	Approx. Weight	Conductor Resistance at 20 Deg C	GPPVC insulation	In Air		In Ground	
									GPPVC	HRPVC	GPPVC	HRPVC
									insulation	insulation	insulation	insulation
Sq. mm.	mm.	mm.	Kg/km	mm W/F	mm	Kg/km	Ohm/km	Amps	Amps	Amps	Amps	Amps
2.5	0.9	11.8	171	1.4	15.5	435	12.1000	21	26	25	29	29
4.0	1.0	13.1	240	1.4	16.5	520	7.4100	27	33	32	36	36
6.0	1.0	14.3	280	1.4	17.5	615	4.6100	35	42	40	47	47
10	1.0	15.8	345	1.4	19.5	750	3.0800	47	57	55	64	64
16	1.0	15.0	465	4 x 0.8	21.0	765	1.9100	59	72	70	82	82
25	1.2	17.4	460	4 x 0.8	19.5	745	1.2000	78	95	90	105	105
35	1.2	18.5	540	4 x 0.8	21.0	850	0.8680	99	120	110	128	128
50	1.4	22.5	695	4 x 0.8	23.5	1020	0.6410	125	153	135	158	158
70	1.4	25.0	850	4 x 0.8	26.0	1275	0.4430	150	183	160	187	187
95	1.6	28.0	1120	4 x 0.8	29.5	1600	0.3200	185	225	190	222	222
120	1.6	30.5	1325	4 x 0.8	32.0	1800	0.2530	210	256	210	245	245
150	1.8	32.5	1590	4 x 0.8	34.5	2175	0.2060	240	294	240	280	280
185	2.0	37.0	1950	4 x 0.8	38.0	2600	0.1640	275	337	275	322	322
240	2.2	42.0	2500	4 x 0.8	43.5	3220	0.1250	325	397	320	374	374
300	2.4	45.0	3055	4 x 0.8	46.3	3900	0.1000	365	445	355	416	416
400	2.6	50.0	3830	4 x 0.8	52.5	4950	0.0778	420	515	385	450	450



TABLE III : PAWAN - CAB 3 Core, Unarmoured(AYY)/Armoured(AYWY & AIFY) Cables - 650/1100 Volts

Nom. Cross Sectional area Sq. mm.	Unarmoured			Armoured			Max.Dc Conductor Resistance at 20 Deg C Ohm/km	A.C. Current Rating			
	Nom. Thickness of PVC insulation mm.	Approx. Overall Dia mm.	Approx. Overall Weight Kg/km	Nom steel Armour size mm W/F	Approx. Overall Dia mm	Approx. Weight Kg/km		In Air		In Ground	
								GPPVC insulation Amps	HRPVC insulation Amps	GPPVC insulation Amps	HRPVC insulation Amps
2.5	0.9	12.6	205	1.4	16.0	535	12.1000	18	22	21	24
4	1.0	14.0	265	1.4	17.0	550	7.4100	23	28	28	32
6	1.0	15.5	310	1.4	18.5	660	4.6100	30	38	35	41
10	1.0	16.5	400	1.4	18.5	690	3.0800	40	49	46	54
16	1.0	18.0	510	4 x 0.8	19.5	780	1.9100	51	63	60	69
25	1.2	21.0	585	4 x 0.8	22.0	900	1.2000	70	86	76	89
35	1.2	23.0	715	4 x 0.8	24.5	1150	0.8680	86	105	92	108
50	1.4	25.6	900	4 x 0.8	28.0	1350	0.6410	105	127	110	129
70	1.4	28.0	1195	4 x 0.8	30.7	1630	0.4430	130	159	135	157
95	1.6	32.7	1530	4 x 0.8	34.7	2150	0.3200	155	190	165	193
120	1.6	36.0	1830	4 x 0.8	38.0	2400	0.2530	180	218	185	215
150	1.8	40.0	2300	4 x 0.8	42.5	2950	0.2060	205	251	210	246
185	2.0	44.5	2750	4 x 0.8	46.0	3450	0.1640	240	294	235	276
240	2.2	50.5	3550	4 x 0.8	52.0	4380	0.1250	280	340	275	322
300	2.4	55.0	4330	4 x 0.8	57.0	5300	0.1000	315	386	305	358
400	2.6	63.0	5400	4 x 0.8	65.0	6600	0.0778	375	445	335	390

TABLE IV : PAWAN - CAB 3 1/2 Core, Unarmoured(AYY)/Armoured(AYFY) Cables - 650/1100 Volts

Nom. Cross Sectional area Sq. mm.	Nom. Thickness of PVC insulation mm.	Unarmoured			Armoured		Max.Dc Conductor Resistance at 20 Deg C Ohm/km	A.C. Current Rating			
		Approx. Overall Dia mm.	Approx. Overall Weight Kg/km	Nom steel Armour size mm	Approx. Overall Dia mm	Approx. Weight Kg/km		In Air		In Ground	
								GPPVC insulation Amps	HRPVC insulation Amps	GPPVC insulation Amps	HRPVC insulation Amps
25	1.2	23.6	690	4 x 0.8	24.5	1060	1.2000	70	86	76	89
35	1.2	25.0	810	4 x 0.8	27.0	1200	0.8680	86	105	92	108
50	1.4	28.5	1080	4 x 0.8	30.0	1580	0.6410	105	127	110	129
70	1.4	32.0	1440	4 x 0.8	34.0	1900	0.4430	130	159	135	157
95	1.6	36.0	1800	4 x 0.8	38.0	2410	0.3200	155	190	165	193
120	1.6	39.4	2200	4 x 0.8	41.5	2810	0.2530	180	218	185	215
150	1.8	43.5	2640	4 x 0.8	44.5	3300	0.2060	205	251	210	246
185	2.0	49.0	3200	4 x 0.8	51.0	4100	0.1640	240	294	235	276
240	2.2	56.0	4100	4 x 0.8	58.0	5010	0.1250	280	340	275	322
300	2.4	61.0	5155	4 x 0.8	63.0	6100	0.1000	315	386	305	358
400	2.6	69.0	6440	4 x 0.8	71.0	7580	0.0778	375	445	335	390

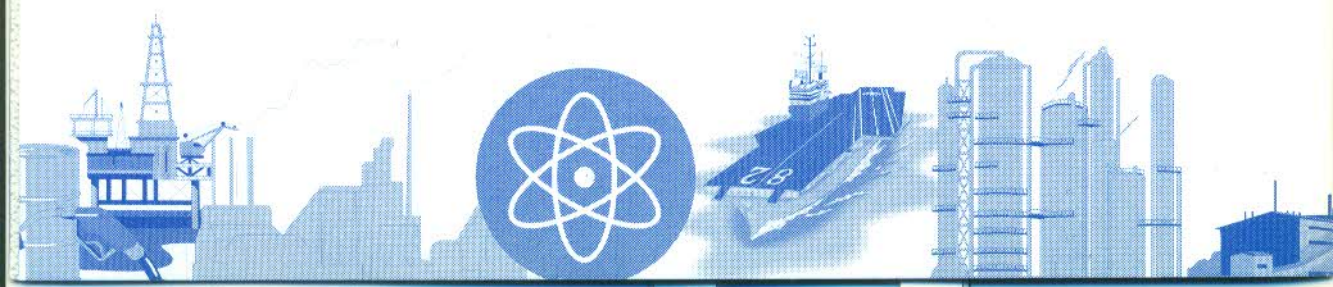


TABLE V : PAWAN - CAB 4 Core, Unarmoured(AYY)/Armoured(AYWY & AYFY) Cables - 650/1100 Volts

Nom. Cross Sectional area	Nom. Thickness of PVC insulation	Unarmoured			Armoured		Max.Dc Conductor Resistance at 20 Deg C	A.C. Current Rating			
		Approx. Overall Dia	Approx. Overall Weight	Nom steel Armour size	Approx. Overall Dia	Approx. Weight		In Air		In Ground	
								GPPVC insulation	HRPVC insulation	GPPVC insulation	HRPVC insulation
Sq. mm.	mm.	mm.	Kg/km	mm W/F	mm	Kg/km	Ohm/km	Amps	Amps	Amps	Amps
2.5	0.9	14.0	230	1.4	16.5	510	12.1000	18	22	21	24
4	1.0	14.7	300	1.4	17.7	610	7.4100	23	28	28	32
6	1.0	16.0	340	1.4	19.0	700	4.6100	30	38	35	41
10	1.0	19.0	440	4 x 0.8	20.0	790	3.0800	40	49	46	54
16	1.0	21.0	520	4 x 0.8	23.0	825	1.9100	51	63	60	69
25	1.2	24.0	730	4 x 0.8	25.0	1090	1.2000	70	86	76	89
35	1.2	25.8	890	4 x 0.8	26.8	1275	0.8680	86	105	92	108
50	1.4	30.0	1155	4 x 0.8	32.0	1650	0.6410	105	127	110	129
70	1.4	33.0	1510	4 x 0.8	34.0	2050	0.4430	130	159	135	157
95	1.6	38.0	1950	4 x 0.8	40.0	2600	0.3200	155	190	165	193
120	1.6	42.3	2360	4 x 0.8	43.0	3100	0.2530	180	218	185	215
150	1.8	47.0	2900	4 x 0.8	49.0	3700	0.2060	205	251	210	246
185	2.0	52.0	3500	4 x 0.8	54.0	4400	0.1640	240	294	235	276
240	2.2	59.5	4450	4 x 0.8	61.5	5500	0.1250	280	340	275	322
300	2.4	65.0	5550	4 x 0.8	68.0	6750	0.1000	315	386	305	358
400	2.6	74.0	7150	4 x 0.8	76.0	8350	0.0778	375	445	335	390

TABLES VI TO VIII : COPPER CONDUCTOR, PVC INSULATED, PVC SHEATHED CABLES

TABLE VI : PAWAN - CAB 2 Core, 3 Core & 4 Core Copper Conductor, PVC Insulated, PVC Sheathed Unarmoured(YY)/Armoured(YWY & YFY) Cables - 650/1100 Volts

No. of Cores	Nom. Cross Sectional area	Nom. Thickness of PVC insulation	Unarmoured			Armoured		Max.Dc Conductor Resistance at 20 Deg C	A.C. Current Rating			
			Approx. Overall Dia	Approx. Overall Weight	Nom steel Armour size	Approx. Overall Dia	Approx. Weight		In Air		In Ground	
		Sq. mm.	mm.	mm.	Kg/km	mm W/F	mm	Kg/km	Ohm/km	Amps	Amps	Amps
2	4	1.0	13.1	275	1.4	16.5	600	4.61	35	43	41	48
2	6	1.0	14.3	360	1.4	17.5	695	3.08	45	55	50	58
2	10	1.0	15.8	490	1.4	19.5	880	1.83	60	73	70	81
2	16	1.0	17.0	660	4 x 0.8	21.0	980	1.15	78	95	90	105
3	4	1.0	14.0	340	1.4	17.0	660	4.61	30	37	36	42
3	6	1.0	15.5	425	1.4	18.5	800	3.08	39	48	45	53
3	10	1.0	16.5	600	4 x 0.8	20.5	925	1.83	52	63	60	69
3	16	1.0	18.0	830	4 x 0.8	19.5	1180	1.15	66	81	77	90
4	4	1.0	14.7	390	1.4	17.7	750	4.61	30	37	36	42
4	6	1.0	16.0	540	1.4	19.0	900	3.08	39	48	45	53
4	10	1.0	19.0	750	4 x 0.8	20.0	1075	1.83	52	63	60	69
4	16	1.0	21.0	1020	4 x 0.8	23.0	1376	1.15	66	81	77	90

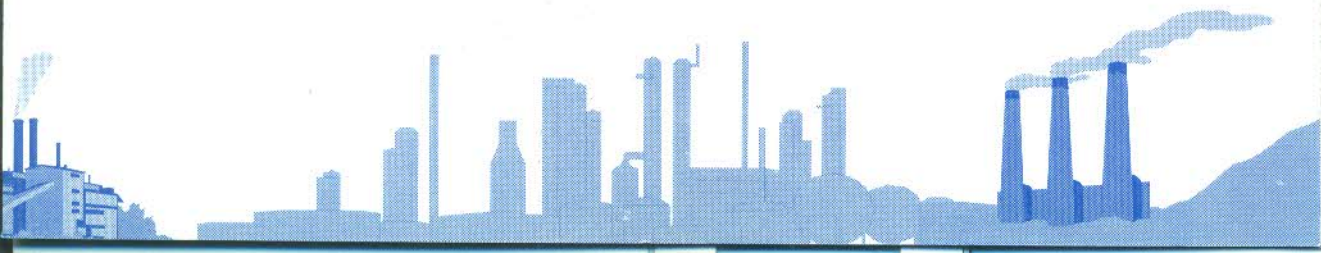


Table VII : PAWAN - CAB 1.5 Sq.mm. Solid Copper Conductor, PVC Insulated, PVC Sheathed, Unarmoured (YY)/Armoured (YWy & YFY) Multi Core Control Cables - 650/1100 Volts

No. of Cores	Nom. Thickness of PVC insulation	Unarmoured		Armoured			Max.Dc Conductor Resistance at 20 Deg C	A.C. Current Rating			
		Approx. Overall Dia	Approx. Overall Weight	Nom steel Armour size	Approx. Overall Dia	Approx. Weight		In Air		In Ground	
								GPPVC Insulation	HRPVC Insulation	GPPVC Insulation	HRPVC Insulation
	mm.	mm	Kg/km	mm W/F	mm	Kg/km	Ohm/km	Amps	Amps	Amps	Amps
2	0.8	11.5	165	1.4	13.0	390	12.1	20	24	23	27
3	0.8	12.0	184	1.4	14.0	420	12.1	17	21	21	24
4	0.8	13.0	215	1.4	15.0	490	12.1	17	21	21	24
5	0.8	13.5	250	1.4	16.0	540	12.1	14	17	17	19
6	0.8	14.5	285	1.4	17.0	620	12.1	13	16	15	18
7	0.8	14.5	300	1.4	17.0	620	12.1	12	15	14	17
9	0.8	15.2	350	1.4	19.0	760	12.1	12	14	14	16
10	0.8	16.5	415	1.4	19.0	820	12.1	11	13	13	15
12	0.8	18.0	455	4 x 0.8	20.0	800	12.1	10	12	12	14
14	0.8	19.0	548	4 x 0.8	21.0	887	12.1	10	12	11	13
16	0.8	19.5	585	4 x 0.8	22.0	940	12.1	9	11	11	12
19	0.8	21.0	692	4 x 0.8	23.0	1040	12.1	9	10	10	12
24	0.8	23.0	860	4 x 0.8	25.0	1205	12.1	8	10	9	11
27	0.8	24.0	943	4 x 0.8	26.0	1310	12.1	8	9	9	10
30	0.8	25.0	1028	4 x 0.8	27.0	1392	12.1	7	9	9	10
37	0.8	26.5	1215	4 x 0.8	29.0	1595	12.1	7	8	8	9
44	0.8	29.0	1480	4 x 0.8	33.0	1950	12.1	6	7	7	8
52	0.8	32.0	1729	4 x 0.8	34.0	2201	12.1	6	7	7	8
61	0.8	34.0	1983	4 x 0.8	36.0	2502	12.1	6	7	6	7

TABLES VIII : PAWAN - CAB 2.5 Sq.mm. Solid Copper Conductor, PVC Insulated, PVC Sheathed, Unarmoured (YY)/Armoured (YWy & YFY) Multi Core Control Cables - 650/1100 Volts

No. of Cores	Nom. Thickness of PVC insulation	Unarmoured		Armoured			Max.Dc Conductor Resistance at 20 Deg C	A.C. Current Rating			
		Approx. Overall Dia	Approx. Overall Weight	Nom steel Armour size	Approx. Overall Dia	Approx. Weight		In Air		In Ground	
								GPPVC insulation	HRPVC insulation	GPPVC insulation	HRPVC insulation
	mm.	mm.	Kg/km	mm W/F	mm	Kg/km	Ohm/km	Amps	Amps	Amps	Amps
2	0.9	12.0	210	1.4	15.0	465	7.41	27	32	32	37
3	0.9	13.5	245	1.4	16.0	515	7.41	24	29	27	31
4	0.9	14.0	290	1.4	17.0	600	7.41	24	29	27	31
5	0.9	15.0	350	1.4	18.0	690	7.41	19	23	23	27
6	0.9	16.0	390	1.4	19.0	760	7.41	18	21	21	25
7	0.9	16.0	410	1.4	19.0	780	7.41	17	20	20	23
9	0.9	18.0	550	4 x 0.8	20.0	870	7.41	16	19	19	22
10	0.9	19.0	620	4 x 0.8	21.0	910	7.41	15	18	18	20
12	0.9	20.0	710	4 x 0.8	21.5	1020	7.41	14	17	17	19
14	0.9	21.0	805	4 x 0.8	23.0	1097	7.41	13	16	16	18
16	0.9	22.0	875	4 x 0.8	24.0	1215	7.41	12	15	15	17
19	0.9	24.0	1000	4 x 0.8	26.0	1360	7.41	12	14	14	16
24	0.9	28.0	1250	4 x 0.8	29.5	1650	7.41	11	13	13	15
27	0.9	28.5	1375	4 x 0.8	30.0	1815	7.41	10	12	12	14
30	0.9	29.0	1500	4 x 0.8	32.0	1950	7.41	10	12	12	13
37	0.9	32.0	1830	4 x 0.8	34.0	2250	7.41	9	11	11	12
44	0.9	35.0	2150	4 x 0.8	37.0	2600	7.41	9	10	10	11
52	0.9	37.0	2400	4 x 0.8	39.0	2900	7.41	8	9	10	11
61	0.9	40.0	2800	4 x 0.8	42.0	3300	7.41	8	9	9	10



FLAME RETARDANT LOW SMOKE (FRLS) CABLES

Fire accidents in cable galleries and other vulnerable areas like power plants and industrial complexes and in public places like theatres, hotels, airports, etc, have demonstrated the need for reliable electrical installation, resistant to fire and ability to operate during a fire without propagating it. The use of correct electrical installation makes evacuation of buildings easier, minimizes the element of panic and enables the emergency services do their job efficiently, significantly aiding damage control operations and reducing loss of life and property.

Electric cables supplying these circuits must be manufactured and tested to certain standards and specifications concerning their behaviour in fire. Flame Retardant Low Smoke (FRLS) cables, which are manufactured using specially developed FRLS compound for sheathing, are resistant to ignition and flame propagation, and reduce smoke emission and release of acid fumes.



Oxygen Index Apparatus



Smoke Density Apparatus

PAWAN-CAB FRLS cables are rigorously tested in-house to ensure that they comply with the required specifications:

TEST	FUNCTION OF THE TEST	SPECIFICATION	SPECIFIED VALUES
Critical Oxygen Index	To determine percentage of oxygen required for supporting combustion at room temperature of sheathing material	ASTM-D 2863	Oxygen Index minimum 29
Temperature Index	To determine at what temperature normal oxygen content of 21% in air will support combustion of sheathing material	ASTM-D 2863 & BICC Hand Book Chapter No.6	The minimum temperature index 250°C
Smoke Density	To determine the visibility (light transmission) under fire of sheathing material.	ASTM-D 2843	The minimum average light transmission of 40%
Acid Gas	To ascertain the amount of Hydrochloric acid gas evolved from PVC sheath of cable under fire conditions.	IEC 754-I	Hydrochloric acid gas released 20% maximum.
Flammability test on group of cables	To determine flame propagation of cables in installed conditions	IEEE 383	In total 20 minutes of burning the cables with flame temperature of 1500°F of 8 feet length samples, the burning of cables does not go up to the top.
Flammability test	1) To determine ignition resistance and flame propagation under specified conditions 2) To determine ignition resistance and flame propagation under specified conditions.	1) Swedish Standard No.SS 424175 Class F3 2) IEC 332-1	From test sample of 850 mm length, the unburnt portion shall be more than 300 mm from the top. In the calculated time duration of burning the cable sample of 600 mm +/- 25 mm length, the length of unburnt portion to be minimum 50 mm from the top.
	3) To determine ignition resistance and flame propagation, especially for bunch of cables, under specified conditions	3) IEC 332-3	From the test samples of 3.5 m lengths affected portion during burning, shall not reach 2.5 m or above from bottom edge of the burner.
Fire Resistance test	To determine to fire resistance property of cable	IS 5831	In the time duration of 60 seconds of burning of sample of 600 mm length of the burnt portion to be maximum 200 mm.

PAWAN-CAB FRLS sheathed cables have been installed at several electricity plant sites, like APSEB, TNEB, GEB, Surat Electricity Company, BHEL, Nuclear Power Corporation and a host of other public and private sector units.

The FRLS properties can be offered in PVC, HRPVC, XLPE insulated Aluminium / Copper conductor power control cables, in inner and / or outer sheath.



PAWAN-CAB: PRODUCT RANGE

- PVC/HRPVC/XLPE/FRLS POWER & CONTROL CABLES
- FLAT/ROUND SUBMERSIBLE CABLES
- FLEXIBLE CABLES/FLEXIBLE CORDS
- MINING CABLES UPTO 3.3/3.3 KV
- AERIAL BUNCHED/BUNDLED CABLE AND ITS ACCESSORIES
- ASCR, AAC & AAA CONDUCTOR



PAWAN POWER & TELECOM LIMITED

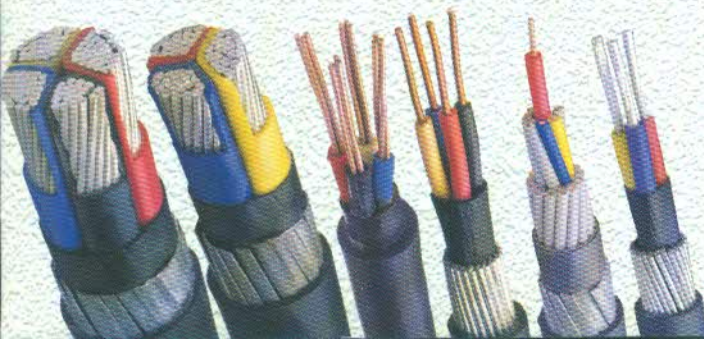
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Andhra Pradesh. Ph: 91279379

Authorised Distributors / Dealers:



All information given herein is in good faith. PAWAN POWER & TELECOM LTD. shall not be liable for any damages arising out of incorrect use.



PAWAN-CAB

OVERHEAD CONDUCTORS

Energising the future

Conservation of energy resources through minimizing wastage & losses is a priority for the entire world. For us in India with our growing needs and scarce resources it becomes all the more important to ensure optimum utilization of energy.

All aluminium alloy conductor (AAAC) is the new technical concept and has the most effective breakthrough for energy conservation through improved conductor design for "TRANSMISSION AND DISTRIBUTION OF POWER " under growing demand "PAWAN-CAB" started manufacturing AAAC to meet the demand of consumers mainly Electricity Boards all over the nation.

Aluminium Alloy Conductors have been in use for over four decades in most of the developing countries for overhead transmission lines, particularly for extra high voltage and high voltage transmission ranging from 66 kv to 400 kv voltage class transmission and in coastal areas. Even for distribution voltage class of 33 kv and 11 kv - AAAC conductor have been proving technically most successful and superior to AAC and ACSR conductors.

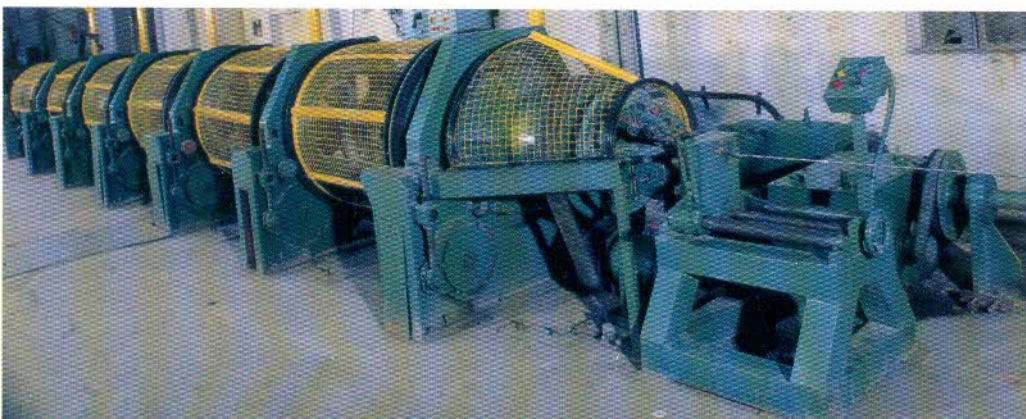
ALUMINIUM CONDUCTORS STEEL REINFORCED (ACSR)

ELECTRICAL CHARACTERISTICS

ACSR Code	Nom. Area sq.mm.	Wire Diameter Aluminium + Steel Nom/ mm	Approximate		DC Resistance at 20 Deg.C (max. ohms/km)	A/C Resistance at		Current Capacity	
			OD mm	Mass kg/ Km		65 Deg.C Ohms/Km	70 Deg.C Ohms/Km	65 Deg.C Amps	75 Deg.C Amps
Squirrel	20	6+1/2.11	6.33	85	1.394	1.894	1.958	89	107
Weasel	30	6+1/2.59	7.77	128	0.9291	1.262	1.305	114	138
Rabbit	50	6+1/3.35	10.05	214	0.5524	0.7506	0.7761	157	190
Racoons	80	6+1/4.09	12.27	319	0.3712	0.5044	0.5216	200	244
Dog	100	6/4.72+7/1.57	14.5	394	0.2792	0.3794	0.3924	239	291
Leopard	130	6/5.28+7/1.75	15.81	492	0.2226	0.3026	0.3129	274	335
Coyote	130	26/2.54+7/1.91	15.89	522	0.2246	0.2663	0.2754	292	358
Wolf	150	30+7/2.59	18.13	726	0.1871	0.2219	0.2295	329	405
Lynx	180	30+7/2.79	19.53	844	0.161	0.1909	0.1974	361	445
Panther	200	30+7/3.00	21.00	974	0.139	0.165	0.1706	395	487
Goat	320	30+7/3.71	25.97	1488	0.09106	0.1082	0.1119	510	634
Kudu	400	42/3.50+7/1.96	26.88	1281	0.07269	0.08917	0.09217	566	705
Drake	400	26/4.44+7/3.45	28.11	1628	0.07309	0.08709	0.09003	578	721
Zebra	420	54+7/3.18	28.62	1621	0.06869	0.08416	0.08699	590	737
Deer	420	30+7/4.27	29.89	1979	0.06854	0.08164	0.0844	605	756
Woose	520	54+7/3.53	31.77	1998	0.05596	0.06881	0.07111	667	836
Morkulla	560	42/4.13+7/2.30	31.68	1781	0.05232	0.06467	0.06681	688	862
Bersimis	690	42/4.57+7/2.54	35.04	2187	0.04242	0.05092	0.0524	791	998

Note : Current capacity at $\alpha=0.5$, $e=0.5$, $s=985$, $v=2200$

Ambient Temperature 40 Deg.C. at sea level



ALL ALUMINIUM ALLOY CONDUCTOR (AAAC) CONFORMING TO IS:398(Part-IV) 1994

ELECTRICAL CHARACTERISTICS

Nom. Alloy Area	Stranding and wire Diameter	Approximate		DC Resistance at 20 Deg.C. a) Standard b) Maximum	AC Resistance at			Current Capacity		
		OD mm	Mass kg/Km		65 Deg.C Ohms/Km	75 Deg.C Ohms/Km	90 Deg.C Ohms/Km	65 Deg.C Amps	75 Deg.C Amps	90 Deg.C Amps
20	7/2.00	6.00	60	a) 1.4969 b) 1.5410	1.7395 1.7912	1.7934 1.8467	1.8742 1.9299	92 90	110 109	132 130
35	7/2.50	7.50	94	a) 0.9580 b) 0.9900	1.1133 1.1418	1.1478 1.1772	1.9950 1.2302	121 119	146 144	175 173
55	7/3.15	9.45	149	a) 0.6034 b) 0.6210	0.7013 0.7215	0.723 0.7438	0.7556 0.7773	160 158	194 191	234 231
80	7/3.81	11.43	218	a) 0.4125 b) 0.4250	0.4795 0.4942	0.4943 0.5095	0.5166 0.5325	202 199	246 242	297 293
100	7/4.26	12.78	273	a) 0.3299 b) 0.3390	0.3836 0.3945	0.3955 0.4067	0.4133 0.4250	232 229	283 279	343 338
125	19/2.89	14.45	342	a) 0.2654 b) 0.2735	0.3087 0.3181	0.3182 0.3279	0.3325 0.3427	266 262	325 320	394 389
150	19/3.15	15.75	407	a) 0.2234 b) 0.2290	0.2599 0.2674	0.268 0.2756	0.2800 0.2880	295 291	362 357	440 434
175	19/3.40	17.00	474	a) 0.1918 b) 0.1969	0.2232 0.2293	0.2301 0.2363	0.2404 0.2470	324 320	398 393	485 478
200	19/3.66	18.30	549	a) 0.1655 b) 0.1710	0.1927 0.1988	0.1987 0.2049	0.2076 0.2141	354 349	436 430	532 524
230	19/3.94	19.70	637	a) 0.1428 b) 0.1471	0.1664 0.1714	0.1716 0.1767	0.1792 0.1846	387 382	478 471	584 575
290	37/3.15	22.05	704	a) 0.11500 b) 0.11820	0.13420 0.13800	0.13830 0.14230	0.14450 0.14860	442 436	548 540	670 661
345	37/3.45	24.15	953	a) 0.09585 b) 0.09840	0.11211 0.11510	0.11554 0.11863	0.12069 0.12391	493 487	613 605	752 742
400	37/3.71	25.97	1102	a) 0.08289 b) 0.08550	0.09717 0.10015	0.10013 0.10320	0.10457 0.10779	538 530	670 660	824 811
465	37/4.00	28.00	1281	a) 0.07130 b) 0.07340	0.08383 0.08627	0.08637 0.08888	0.09018 0.09281	589 580	736 725	905 892
525	61/3.31	29.79	1448	a) 0.06330 b) 0.06510	0.07466 0.07668	0.07691 0.07899	0.08028 0.08246	632 623	792 781	976 963
570	61/3.45	31.05	1574	a) 0.05827 b) 0.05980	0.06891 0.07070	0.07097 0.07282	0.07407 0.07601	663 655	833 822	1028 1015
605	61/3.55	31.95	1666	a) 0.05503 b) 0.05680	0.06521 0.06724	0.06716 0.06925	0.07008 0.07227	686 676	862 849	1065 1049
640	61/3.66	32.94	1771	a) 0.05177 b) 0.05340	0.06150 0.06337	0.06332 0.06525	0.06607 0.06808	711 700	894 881	1106 1089
695	61/3.81	34.29	1919	a) 0.04778 b) 0.04920	0.05697 0.05864	0.05865 0.06037	0.06117 0.06297	745 734	939 925	1162 1145
745	61/4.00	36.00	2116	a) 0.04335 b) 0.04460	0.05196 0.05341	0.05348 0.05497	0.05576 0.05732	788 777	995 981	1234 1217

Note : Resistance (a) At resistivity 0.0325 ohm-sq.mm/m and nominal diameter of wires
(b) At resistivity 0.0328 ohm-sq.mm/m and minimum diameter of wires.

COMPARISON OF AAAC WITH ACSR

AAAC	ACSR
Aluminium Alloy conductor is revolutionary breakthrough in conductor technology. Users all over the world are switching over to AAAC due to its technical superiority.	Aluminium conductor steel reinforced is outdated in technology. Its use is obsolete in developed countries due to technical and economical shortcomings.
Heat treated Al-Mg-Si alloy makes AAAC totally free from bimetallic corrosion and exceptionally resistant to environmental corrosion.	In ACSR, corrosion (bi-metallic and environmental) because of steel core sets in within 2 years, lowering efficiency.
Service life is around 60 years — twice as durable as ACSR	Service life ranges between 15-30 years. Particularly less in industrial and saline atmospheres.
Hard to cut and impossible to recycle into utensils, Excellent inhibitor of theft, eliminating unwanted power breakdowns.	Easily cut and recycled overnight for making utensils. Stolen ACSR till date adds upto Rs.100 crores even by conservative estimates.
AAAC has higher strength to weight ratio ranging between 10.6-11.6 on an equal diameter basis. Offers savings due to reduction in number of towers, foundations and accessories.	ACSR has lower strength to weight ratio ranging between 8.4-9.4 hence requires lesser spans than AAAC. Lower cost of ACSR is offset due to higher cost of towers etc
Suffers no reduction in strength on temperature rise upto 90°C since it is specially heat treated at 160°C temp. can be loaded to higher level of capacity.	Strength of ACSR reduces with rise in temperature above 65°C. Not suitable for overloading.
No steel core means, no magnetic losses. Thus zero additional line losses due to electromagnetic effect.	Steel core induces eddy current and hysteresis losses.
Repairs and replacing, dead ending is easier because AAAC is monometallic. Ordinary fittings and accessories without steel inserts can be used. Works out to be economical in the long run.	Repairs are time consuming and frequent, requiring special procedures. Maintenance costs and inherent defects make it costlier in the long run.



RANGE OF PRODUCTS

- PVC/HRPVC/XLPE/FRLS Power & Control Cables
- Flat/Round Submersible Cables
- Flexible Cables/Cords
- Mining Cables upto 3.3/3.3 KV
- ACSR, AAC & AAA Conductor
- Aerial Bunched/Bundled Cable and its Accessories



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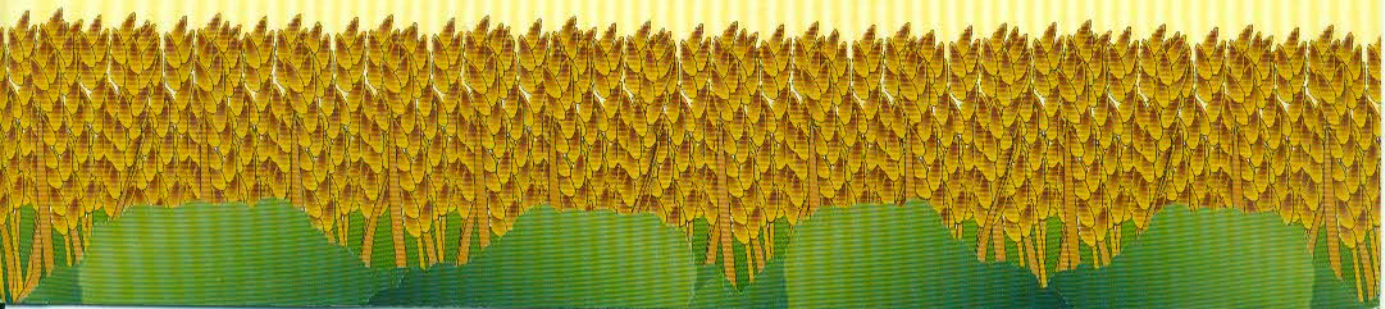
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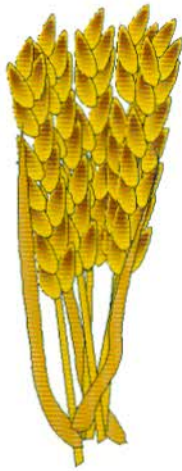


PAWAN CAB



FLAT/ROUND SUBMERSIBLE CABLES





PAWAN POWER & TELECOM LTD -

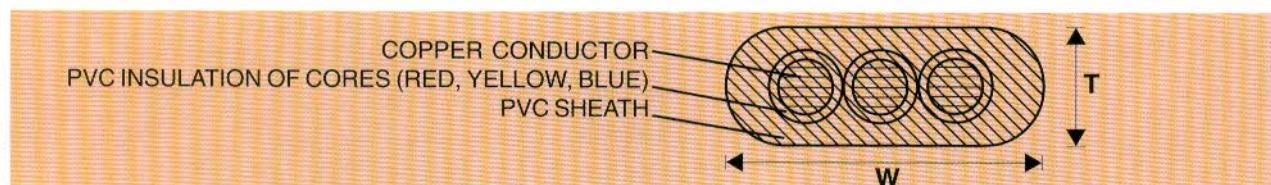
manufacturers of various types of cables and conductors catering to the needs of Indian Industries, have also started manufacturing the submersible cables keeping in mind the importance of growth for Agriculture Sector in India. At PAWAN CAB, flat/

round submersible cables are manufactured in a sophisticated processing plant, rigid quality control is ensured right from the stage of raw-material to finished product. With well equipped modern laboratory and a team of Technical and Quality Control professionals, consistency of quality is maintained. The submersible cables are resistant to soil, chemicals, grease and oils.



3 CORE FLAT CABLES

TECHNICAL DATA



CONDUCTOR		INSULATION		SHEATH			Resistance @ 20°C (max.) (Ohm/km)	Current carrying capacity @ 40°C (Amps.)
Area (Nom.) (Sq.mm.)	Number/ Size of wire (mm)	Thickness (Nom.) (mm)	*Core dia. (mm)	Thickness (Nom.) (mm)	*Width 'W' (mm)	*Thickness 'T' (mm)		
1.5	22/3	0.8	3.25	1.15	12.8	6.0	13.30	14
2.5	36/3	0.9	3.90	1.15	14.6	6.4	7.98	18
4.0	56/3	1.0	4.65	1.15	17.2	7.4	4.95	26
6.0	84/3	1.0	5.30	1.15	18.7	7.9	3.30	31
10.0	140/3	1.0	6.60	1.40	23.7	9.9	1.91	42
16.0	226/3	1.0	8.20	1.40	28.0	11.4	1.21	57
25.0	354/3	1.2	10.10	2.00	35.5	14.7	0.780	72
35.0	495/3	1.2	11.50	2.00	39.5	16.2	0.554	90
50.0	703/3	1.4	13.60	2.20	45.5	18.3	0.386	115
70.0	440/45	1.4	15.30	2.20	51.0	20.0	0.272	143
95.0	475/5	1.6	18.10	2.40	60.0	23.5	0.206	165

NOTE :

The number of wires is approximate and strand diameter is nominal; they shall be such as to satisfy the requirements of conductor resistance as per IS 8130/1984

Any other/Special cables as per customer requirement available on request.

*Approximate values.

Selection Guide for 3 Core Flat Cables

1) HP Vs Current

The full load current for submersible pump motors, 3 phase, 50 cycles, 415 - 425 V.

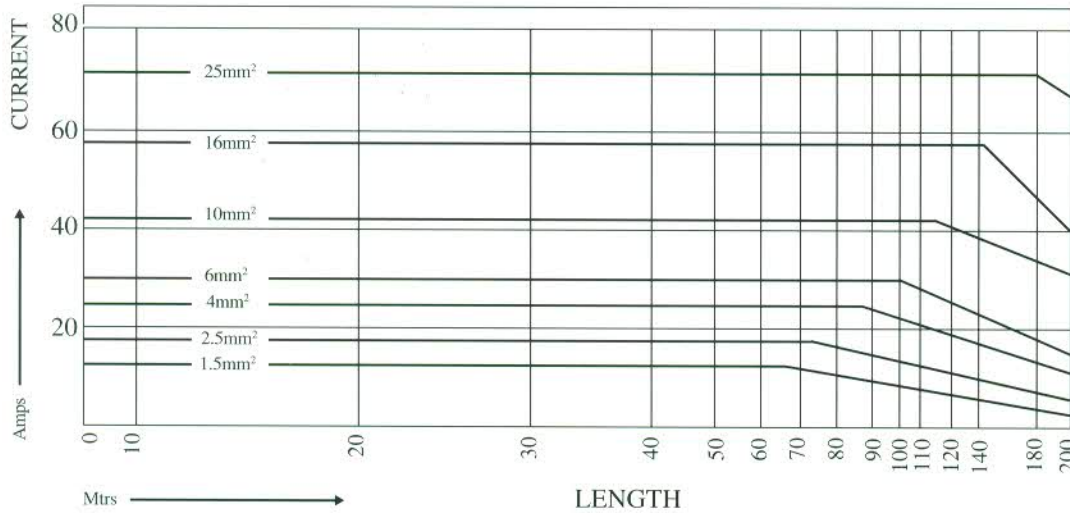
HP	5.0	7.5	10.0	12.5	15.0	17.5	20.0	25.0	30.0	35.0	40.0	45.0	50.0	55.0	60.0	65.0	70.0	75.0	80.0
Amp	7.5	11.0	14.9	18.9	22.5	25.2	28.4	35.6	42.3	50.4	58.1	62.1	67.5	73.8	81.0	87.3	93.6	100.8	108.0

2) Derating Factors

Multiply the current carrying capacity of the cable by factors given below for various ambient temperatures.

Ambient Temperature°C	30	35	40	45	50
Derating Factor	1.09	1.04	1.00	0.95	0.77

3) Cable Recommendation Chart at 40°C



Double Sheathed Round Submersible Cables

PAWAN CAB Double sheathed round 3 core and 4 core cables are ideally suitable for heavy duty applications like sewage, slurry and dewatering pumps in which the outer sheath of the cable must be able to withstand abrasion, prevent ingress of water along the interstices of the cable, and be resistant to acid fluids and chemicals.

Conductor		Radial Thickness of Insulation (Nom.) (m.m)	Thickness of Inner Sheath Approx.		Thickness of Outer Sheath Nominal		Overall Diameter Nominal	
Area (Sq. mm)	No. & Size of wire (m.m)		3Core (m.m)	4 Core (m.m)	3Core (m.m)	4 Core (m.m)	3Core (m.m)	4 Core (m.m)
1.5	30/.25	0.6	0.4	0.4	1.2	1.2	11.0	12.0
2.5	50/.25	0.7	0.4	0.4	1.2	1.2	12.5	13.5
4.0	56/.3	0.8	0.4	0.4	1.2	1.4	13.5	15.0
6.0	84/.3	0.8	0.4	0.6	1.4	1.4	15.5	17.0
10.0	140/.3	1.0	0.6	0.6	1.4	1.4	19.0	20.5
16.0	226/.3	1.0	0.8	0.8	1.4	1.4	21.5	23.5
25.0	354/.3	1.2	0.8	1.0	1.6	1.6	26.0	28.5
35.0	495/.3	1.2	1.0	1.0	1.6	1.6	29.0	32.0



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