AVERCAB®
CABLE

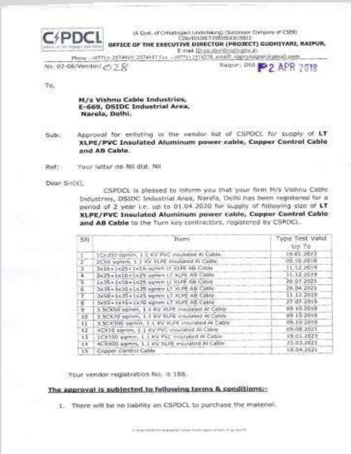
PRODUCT CATALOGUE

MAKE IN INDIA

स्वच्छ भारत
एक कदम स्वच्छता की ओर

IS:694/2010 IS:1554(P-1)1988 IS:7098(P-1)1988 IS:14255/1995

AVERCAB®
CABLE


CSPDCL
OFFICE OF THE EXECUTIVE DIRECTOR (PROJECT) GUDHIYARI, RAIPUR

To,
M/s Vishnu Cable Industries,
E-669, DSIDC Industrial Area,
Narela, Delhi.

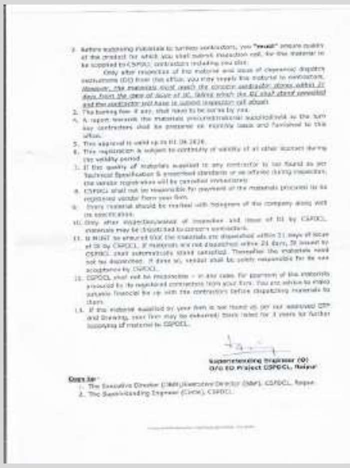
Sub: Approval for enlisting in the vendor list of CSPDCL for supply of LT XLPE/PVC Insulated Aluminum power cable, Copper Control Cable and AB Cable.

Dear Sir(s),
CSPDCL is pleased to inform you that your firm M/s Vishnu Cable Industries, DSIDC Industrial Area, Narela, Delhi has been registered for a period of 2 year i.e. up to 01.04.2020 for supply of following size of LT XLPE/PVC Insulated Aluminum power cable, Copper Control Cable and AB Cable to the Turn key contractors, registered by CSPDCL.

Your vendor registration No. is 198.

The approval is subjected to following terms & conditions:

1. There will be no liability on CSPDCL to purchase the material.




HEAVY ENGINEERING CORPORATION LIMITED
(A Government of India Enterprise)
Plant Plaza Road, Dhurwa, Ranchi – 834004, Jharkhand
REGISTRATION CELL/HMBP

An ISO 9001 – 2008 COMPANY

CERTIFICATE FOR REGISTRATION AS APPROVED SUPPLIER FOR HEC LTD.

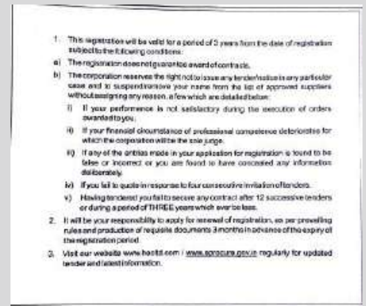
VISHNU CABLE INDUSTRIES
E-669, D.S.I.D.C. INDUSTRIAL AREA
NARELA
DELHI – 110 040

Dear Sirs,
With reference to your application dated .... seeking enlistment in our list of suppliers, we have pleasure to confirm that your name has been registered as a prospective supplier for the following items:-

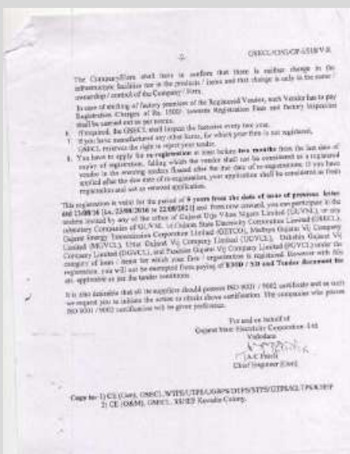
Sl. No.	Description	Status
1.	LT CABLES	Manufacturer

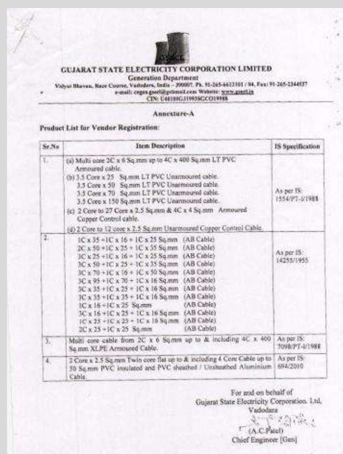
Please quote this number in all your future quotation/correspondence with this corporation.

Registration Officer
Reg.Cell / HEC Ltd. Ranchi

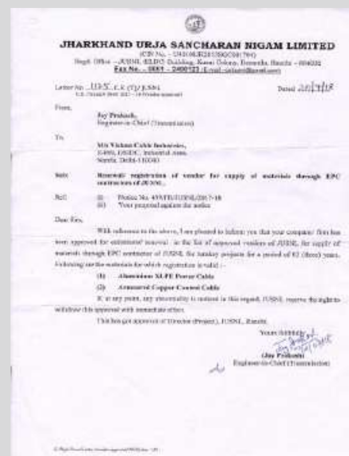

1. This registration will be valid for a period of 3 years from the date of registration subject to the following conditions:
a) The registration does not guarantee award of contracts.
b) The corporation reserves the right not to issue any tender/notice in any particular case and to suspend/remove your name from the list of approved suppliers without assigning any reason, a few which are detailed below:
2. It will be your responsibility to apply for renewal of registration, as per prevailing rules and production of requisite documents 3 months in advance of the expiry of the registration period.
3. Visit our website www.hecltd.com / www.eprocure.gov.in regularly for updated tender and latest information.


GUJARAT STATE ELECTRICITY CORPORATION LIMITED




GUJARAT STATE ELECTRICITY CORPORATION LIMITED
Generation Department
Annexure-A
Product List for Vendor Registration:

For and on behalf of
Gujarat State Electricity Corporation Ltd.
Vadodara
(A.C.Patel)
Chief Engineer (Gen)


JHARKHAND URJA SANCHARAN NIGAM LIMITED

To,
M/s Vishnu Cable Industries,
E-669, DSIDC Industrial Area,
Narela, Delhi-110040


STEEL AUTHORITY OF INDIA
ISSCO STEEL PLANT

TO,
VISHNU CABLE INDUSTRIES
E-669, D.S.I.D.C. INDUSTRIAL AREA, NARELA
DELHI
110040
2018

Date:- 01-Aug-

VENDOR REGISTRATION CERTIFICATE

We are pleased to register you as a Vendor of ISP-SAIL (plant/unit) for the item /items listed below:

Sl.No.	Category code	Category of Items	Remarks
1	793	GENERAL PURPOSE - PVC CABLE	
2	791	EPR/CSP(LT) CABLE	
3	797	INSTRUMENT CABLE	
4	183	PVC POWER CABLE [LARGE MFRS.]	
5	184	PVC POWER CABLES [MEDIUM/SSI MFRS.]	
6	710	LT XLPE CONTROL CABLES	
7	800	SCREENED CABLE	
8	473	LIGHTING CABLES	

Regn No.	Supplier Code	Area Code	Valid upto	Vendor Type
NEW/4565	5337	SAIL-ISP	01/08/2023	MANUFACTURER

NOTE: i) We may not necessarily send all our enquiries for these categories of items as and when we are in the market. This registration does not guarantee award of contracts.

ii) We reserve the right to demand from you such sureties as may be necessary as an earnest of your fulfilling contracts / supply orders which we may award you.

iii) We may eliminate your name from our panel without assigning any reason.


STEEL AUTHORITY OF INDIA
ISSCO STEEL PLANT

Ref. No:
TO
VISHNU CABLE INDUSTRIES
E-669, D.S.I.D.C. INDUSTRIAL AREA,
NARELA
DELHI
110040

Date:- 01-Aug-2018

Dear Sirs,

Re: New Registration Certificate

PARTY CODE: 5337

Please find enclosed herewith New Registration Certificate as a vendor Req. sl. no. REQ/NEW/4565 Dated: 22/06/2018 which is valid up to 01/08/2023 which kindly acknowledge receipt.

If there is any significant change with respect to address and any other status of your firm, you may keep us informed so that necessary correction and updation of records can be done at our end.

Thanking you,

Yours faithfully,

For and On behalf of
STEEL AUTHORITY OF INDIA - ISSCO STEEL PLANT
Vendor Management Cell

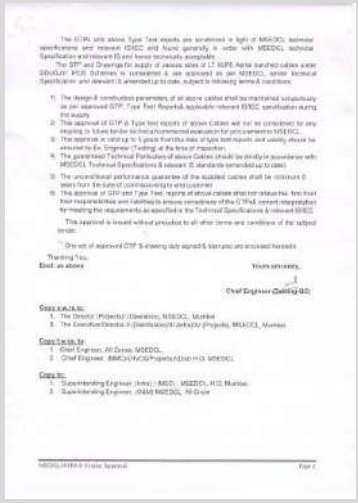
Encl : As Stated


iv) It shall be your responsibility to apply for renewal of Registration on payment of stipulated renewal fee and production of requisite documents 90 days in advance before expiry of Registration period to keep your name in the register of approved suppliers.

Head of Materials Management

AVERCAB®
CABLE


MAHAVITARAN




VISHNU CABLE INDUSTRIES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VISHNU CABLE INDUSTRIES

PRODUCT RANGE

Avercab provides a very wide range of products to its customers. The company is perhaps one of the few to offer customers specialty cables such as fire survival cables, zero halogen cables and braided cables. All wires are manufactured as per global quality and customer specifications.

- **LT Copper/Aluminum Armoured/Unarmoured Cables**
- **LT PVC and XLPE Power/Control Cables**
- **Thermocouple Compensating & Extension Cables**
- **FRLS/FR/HR/HFFR/HOFR/ Rubber/LDPE/LSOH Power Control & Instrumentation Cables**
- **Flexible (Single & Multicore) and Cords**
- **House Wires (FR/FRLS/HRPVC/LSOH)**
- **Fire Survival**
- **Welding Cables/Rubber Cables**
- **Flat Cable**
- **Ship Wiring Cables**
- **Aerial Bunched Cables (AB Cables)**
- **Bare Insulated Conductor**

& MOREAS PER CUSTOMER SATISFACTION
IN BS, VDE, IEC, IS AND SABS STANDARDS
(UPTO AND INCLUDING 132KV)

AVERCAB®
CABLE

PVC INSULATED ARMOURED CABLES

Application – Indoors or Outdoors in cable ducts, cable trays, conduits or underground locations under mechanical stresses in power and switching stations.
– Local distribution systems, Industrial and Commercial units for basic power & lighting purpose.

Standards	BS 6346, IEC 60502-1 & VDE 0271
Operating Temperature	70° C
Short Circuit Temp.	160° C
Working Voltage	600 / 1000 Volts
Test Voltage	3 KV r m s for 5 minutes

CONSTRUCTION

Conductor Aluminium / Annealed plain copper solid* / stranded conductor conform to BS 6360 and IEC 60228, Class 2 (Circular / Sector shaped)

Insulation PVC type TI1 as per BS 7655: Section 3.1 and PVC type A as per IEC 60502-1

Single core	Red, Yellow, Blue, Black, Grey or Natural.
2 Core	Red, Black
3 Core	Red, Yellow, Blue
4 Core	Red , Yellow, Blue, Black
5 Core	Red, Yellow, Blue, Black & Grey
6 Core & above	Blue , Yellow and remaining core Grey each layer.

Assembly Insulated conductors are laid up together, if necessary interstices may be filled with fillers.

Fillers Non-hygroscopic Poly propylene fillers are included between laid up cores wherever required

A separator tape of non-hygroscopic poly propylene material is applied over laid up cores wherever necessary.

Bedding Extruded PVC compatible with operating temperature.

Armour For Single Core - Aluminium round wire / flat Strep.
For Multicore - Galvanised Steel round wire / flat wire / tape.

Outer Sheath Extruded PVC / Special PVC compound such as Flame Retardant (FR), Flame Retardant Low Smoke (FRLS), Low Smoke Zero Halogen (LSOH) can be used for outer sheath to suit a variety of environment and fire risk conditions. Flamabillity test confirms to IEC 332 & Swidish chimeny. For installation where fire and associated problems such as emission of smoke and toxic fumes offer a serious potential threat, special LSF (Low smoke & fumes) compound can be provided. LSF compound is Halogen free (Flourine, Chlorine, Bromine) when tested as per BS 6425 (Pt 1) & IEC 60754 (Pt 1). The acid gas evolved during combustion is less than 0.5% by weight of material.

Minimum Bending radius :12 times the cable diameter
Admissible Pulling Force : Aluminium-30/mm^2

ISO 9001 COMPANY

Note : Unarmoured cables construction details available upon request.
*Aluminium - upto 10 mm^2 Copper - upto 6 mm^2

**Modification which serve to improve our products will be implemented without notice.

Table-1: Single Core PVC insulated armoured & unarmoured cable with Aluminium/ Copper Conductor conf. to IS: 1554(P-1)/1988

Area	Thickness of PVC Insulation		Dimension of Armour		Thickness of PVC Outer sheath		Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp. 70°C		Reactance at 50Hz.		Current rating						Short Circuit rating for 1 Sec.	
	Arm	Un-Arm	Wire	Strip	Arm	Un-Arm	Arm	Un-Arm	Armoured								Arm	Un-Arm	Direct in Ground		in duct		in Air			
mm²									kg/km	kg/km			Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Amps	Amps	Amps				kA(rms)	
									Al	Cu			Al	Cu	Al	Cu			Al	Cu	Al	Cu	Al	Cu	Al	Cu
4	1.3	1.0	1.4	--	1.24	1.8	11	9	140	165	80	105	7.41	4.61	9.5	5.52	0.153	0.137	31	39	30	38	27	35	0.30	0.46
6	1.3	1.0	1.4	--	1.24	1.8	12	9.5	170	205	100	140	4.61	3.08	5.91	3.69	0.147	0.131	39	49	37	48	35	44	0.46	0.69
10	1.3	1.0	1.4	--	1.24	1.8	13	40	200	260	125	185	3.08	1.83	3.95	2.19	0.136	0.121	51	65	51	64	47	60	0.76	1.15
16	1.3	1.0	1.4	--	1.24	1.8	14	11	225	320	150	245	1.91	1.15	2.45	1.38	0.125	0.111	66	85	65	83	64	82	1.22	1.84
25	1.5	1.2	1.4	--	1.24	1.8	15	13	290	440	200	350	1.20	0.727	1.54	0.87	0.118	0.107	86	110	84	110	84	110	1.90	2.88
35	1.5	1.2	1.4	--	1.24	1.8	16	14	340	555	240	455	0.868	0.524	1.11	0.627	0.111	0.101	100	130	100	125	105	130	2.66	4.03
50	1.7	1.4	1.4	--	1.24	1.8	18	116	420	705	305	590	0.641	0.387	0.822	0.463	0.108	0.098	120	155	115	150	130	165	3.80	5.75
70	1.7	1.4	1.4	--	1.4	1.8	20	17	530	960	385	815	0.443	0.268	0.568	0.321	0.100	0.090	140	190	135	175	155	205	5.32	8.05
95	1.9	1.6	--	4 X 0.8	1.4	1.8	21	20	620	1200	500	1075	0.320	0.193	0.411	0.232	0.094	0.087	175	220	155	200	190	245	7.22	10.9
120	1.9	1.6	--	4 X 0.8	1.4	2.0	23	21	720	1450	605	1335	0.253	0.153	0.3258	0.184	0.090	0.085	195	250	170	220	220	280	9.12	13.8
150	2.1	1.8	--	4 X 0.8	1.4	2.0	25	23	860	1765	725	145	0.206	0.124	0.265	0.150	0.089	0.084	220	280	190	245	250	320	11.4	17.3
185	2.3	2.0	--	4 X 0.8	1.4	2.0	27	25	1020	2135	875	2005	0.164	0.0991	0.211	0.120	0.086	0.082	240	305	210	260	290	370	14.1	21.3
240	2.5	2.2	--	4 X 0.8	1.4	2.0	30	28	1255	2675	1095	2518	0.125	0.0754	0.162	0.0924	0.084	0.080	270	345	225	285	335	425	18.2	27.6
300	2.7	2.4	--	4 X 0.8	1.56	2.0	32	31	1510	3345	1320	3145	0.100	0.0601	0.130	0.0746	0.082	0.078	295	375	245	310	380	475	22.8	34.5
400	3.0	2.6	--	4 X 0.8	1.56	2.2	36	35	1870	4240	1685	4140	0.0778	0.0470	0.102	0.0597	0.081	0.078	325	400	275	335	435	550	30.4	46.0
500	3.4	3.0	--	4 X 0.8	1.56	2.2	40	38	2325	5310	2110	5165	0.0605	0.0366	0.081	0.0481	0.080	0.077	345	425	295	355	480	590	38.0	57.5
600	3.9	3.4	--	4 X 0.8	1.72	2.4	43	44	2955	6865	2695	6500	0.0469	0.0283	0.0648	0.0395	0.077	0.077	390	470	320	375	550	660	47.9	72.5
800	3.9	3.4	--	4 X 0.8	1.88	2.4	50	48	3620	8565	3285	7941	0.0367	0.0221	0.0529	0.0345	0.078	0.075	440	530	360	420	620	745	60.8	92.0
1000	3.9	3.4	--	4 X 0.8	2.04	2.6	54	53	4375	10530	4010	10065	0.0291	0.0176	0.0445	0.0303	0.076	0.074	490	590	400	470	700	835	76.0	115.0

Table-2:2 Core PVC Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:1554 (P-1)/1988

						Un-Arm			Armoured				Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km								kA(rms)	
2.5	0.9	0.3	1.4	--	1.24	1.8	15	13	420	450	200	210	12.1	7.41	14.5	8.87	0.106	25	32	21	27	21	27	0.19	0.29
4	1.0	0.3	1.4	--	1.24	1.8	16	14	425	540	230	280	7.41	4.61	8.9	5.52	0.102	32	41	27	35	27	35	0.30	0.46
6	1.0	0.3	1.4	--	1.24	1.8	18	15	565	635	280	350	4.61	3.08	5.54	3.69	0.097	40	50	34	44	35	45	0.46	0.70
10	1.0	0.3	1.4	--	1.24	1.8	19	17	650	775	350	475	3.08	1.83	3.7	2.19	0.091	55	70	45	58	47	60	0.76	1.16
16	1.0	0.3	--	4 X 0.8	1.40	1.8	18	16	530	720	295	485	1.91	1.15	2.3	1.38	0.086	70	90	58	75	59	78	1.22	1.86
25	1.2	0.3	--	4 X 0.8	1.40	2.0	21	19	685	990	425	730	1.20	0.727	1.44	0.87	0.085	90	115	76	97	78	105	1.90	2.90
35	1.2	0.3	--	4 X 0.8	1.40	2.0	22	21	800	1225	515	955	0.868	0.524	1.04	0.627	0.083	110	140	92	120	99	125	2.66	4.06
50	1.4	0.3	--	4 X 0.8	1.40	2.0	25	23	975	1550	640	1230	0.641	0.387	0.77	0.464	0.083	135	165	115	145	125	155	3.80	5.80
70	1.4	0.3	--	4 X 0.8	1.56	2.0	27	26	1185	2045	815	1675	0.443	0.268	0.533	0.321	0.077	160	205	140	180	150	195	5.32	8.12
95	1.6	0.4	--	4 X 0.8	1.56	2.2	31	29	1500	2665	1090	2260	0.320	0.193	0.385	0.232	0.077	190	240	170	215	185	230	7.22	11.0
120	1.6	0.4	--	4 X 0.8	1.56	2.2	33	31	1200	3185	1275	2750	0.253	0.153	0.305	0.184	0.075	210	275	190	235	210	265	9.12	13.9
150	1.8	0.4	--	4 X 0.8	1.72	2.4	35	34	2020	3845	1535	3365	0.206	0.124	0.249	0.149	0.075	240	310	210	270	240	305	11.1	17.4
185	2.0	0.5	--	4 X 0.8	1.88	2.4	39	37	2425	4680	1865	4120	0.164	0.0991	0.198	0.121	0.074	275	350	240	300	275	350	14.1	21.5
240	2.2	0.5	--	4 X 0.8	2.04	2.6	44	42	3020	5890	2385	5260	0.125	0.0754	0.152	0.0929	0.074	320	405	275	345	325	410	18.2	27.8
300	2.4	0.6	--	4 X 0.8	2.20	2.8	48	46	3725	7295	2930	6640	0.100	0.0601	0.122	0.0753	0.074	355	430	305	385	365	465	22.8	34.8
400	2.6	0.7	--	4 X 0.8	2.36	3.2	53	52	4495	9280	3720	8500	0.0778	0.0470	0.096	0.0604	0.073	385	490	345	425	420	530	30.4	46.4
500	3.0	0.7	-	4 X 0.8	2.68	3.4	59	57	5420	11500	4665	10700	0.0605	0.0366	0.076	0.0489	0.073	437	555	391	482	476	601	38.0	58.0
630	3.4	0.7	--	4 X 0.8	2.84	3.8	66	64	6875	14500	5935	13750	0.0469	0.0283	0.061	0.0401	0.073	496	631	444	548	541	683	47.9	73.1

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm² will be non-compacted. • Above 16mm² compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions

• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-3: 3 Core PVC Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:1554 (P-1)/1988

					Un-Arm		Un-Arm	Armoured									Un-Arm										
												Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km									kA(rms)	
2.5	0.9	0.3	1.4	–	1.24	1.8	16	13	460	505	205	250	12.1	7.41	14.5	8.87	0.106	21	27	18	24	18	24	0.19	0.29
4	1.0	0.3	1.4	–	1.24	1.8	17	15	550	625	260	330	7.41	.61	8.9	5.52	0.102	28	36	23	30	23	30	0.30	0.46
6	1.0	0.3	1.4	–	1.24	1.8	19	16	615	730	315	420	4.61	3.08	5.54	3.69	0.097	35	45	30	38	30	39	0.46	0.70
10	1.0	0.3	1.4	–	1.4	1.8	21	18	755	950	395	585	3.08	1.83	3.7	2.19	0.091	46	60	39	50	40	52	0.76	1.16
16	1.0	0.3	–	4x0.8	1.4	1.8	20	19	670	965	400	685	1.91	1.15	2.3	1.38	0.086	60	77	50	64	51	66	1.22	1.86
25	1.2	0.3	–	4x0.8	1.4	2.0	23	22	870	1325	475	1030	1.20	0.727	1.44	0.87	0.085	76	99	63	81	70	90	1.90	2.90
35	1.2	0.3	–	4x0.8	1.4	2.0	25	24	1010	1660	710	1365	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.06
50	1.4	0.3	–	4x0.8	1.56	2.0	28	27	1270	2150	900	1765	0.641	0.387	0.77	0.464	0.083	110	145	95	125	105	135	3.80	5.80
70	1.4	0.4	–	4x0.8	1.56	2.2	31	30	1565	2880	1180	2470	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.12
95	1.6	0.4	–	4x0.8	1.56	2.2	35	33	1935	3725	1515	3280	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	11.0
120	1.6	0.4	–	4x0.8	1.72	2.2	38	36	2280	4540	1790	4000	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.9
150	1.8	0.5	–	4x0.8	1.88	2.4	42	40	2745	5540	2190	4935	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.4	17.4
185	2.0	0.5	–	4x0.8	1.88	2.6	45	44	3245	6690	2695	6075	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.1	21.5
240	2.2	0.6	–	4x0.8	2.2	2.8	52	50	4250	8475	3465	7780	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.2	27.8
300	2.4	0.6	–	4x0.8	2.36	3.0	58	55	5080	10500	4255	9800	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.8	34.8
400	2.6	0.7	–	4x0.8	2.52	3.4	64	62	6280	13500	5375	12500	0.0778	0.0470	0.096	0.0604	0.073	335	425	290	360	375	455	30.4	46.4
500	3.0	0.7	--	4x0.8	2.84	3.6	72	69	7770	17000	6770	15800	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.0	58.0

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm^2 will be non-compacted. • Above 16mm^2 compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions
• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-4: 3 1/2 Core PVC Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:1554 (P-1)/1988

					Dimension of Armour Strip	Thickness of PVC Outer Sheath		Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp 70°C		Reactance at 50Hz.	Current Rating						Short circuit rating for 1 Sec.	
Power				(Min)		Arm	Un-Arm	Arm	Un-Arm	Armoured		Unarmoured							Direct in Ground		In Duct		In Air			
mm^2										kg/km	kg/km	kg/km	kg/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Amps	Amps	Amps				kA(rms)	
										Al	Cu	Al	Cu	Al	Cu	Al	Cu		Al	Cu	Al				Al	Cu
25	16	1.2	1.0	0.3	4.0 x 0.8	1.4	2.0	25	23	985	1535	690	1245	1.20	0.727	1.44	0.87	0.085	76	99	63	81	70	90	1.90	2.90
35	16	1.2	1.0	0.3	4.0 x 0.8	1.4	2.0	27	26	1150	1900	820	1560	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.06
50	25	1.4	1.2	0.3	4.0 x 0.8	1.56	2.0	30	28	1450	2460	1050	2060	0.641	0.387	0.77	0.464	0.083	110	145	95	125	105	135	3.80	5.80
70	35	1.4	1.2	0.4	4.0 x 0.8	1.56	2.2	33	32	1780	3290	1370	2885	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.12
95	50	1.6	1.4	0.4	4.0 x 0.8	1.56	2.2	38	36	2270	4315	1780	3815	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	11.0
120	70	1.6	1.4	0.5	4.0 x 0.8	1.72	2.4	41	40	2715	5350	2185	4815	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.9
150	70	1.8	1.4	0.5	4.0 x 0.8	1.88	2.4	45	43	3160	6330	2550	5760	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.4	17.4
185	95	2.0	1.6	0.5	4.0 x 0.8	2.04	2.6	50	48	3840	7810	3165	7165	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.1	21.5
240	120	2.2	1.6	0.6	4.0 x 0.8	2.20	3.0	57	55	4845	9860	4070	9085	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.2	278
300	150	2.4	1.8	0.6	4.0 x 0.8	2.36	3.2	62	60	5745	12360	4950	11370	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.8	34.8
400	185	2.6	2.0	0.7	4.0 x 0.8	2.68	3.4	70	68	7040	15585	6240	14625	0.0778	0.0470	0.096	0.0604	0.073	335	425	290	360	375	455	30.4	46.4
500	240	3.0	2.2	0.7	4.0 x 0.8	2.84	3.8	78	77	8920	19500	7970	18500	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.0	58.0

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm^2 will be non-compacted. • Above 16mm^2 compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions
• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

AVERCAB CABLE

Table-5: 4 Core PVC Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:1554 (P-1)/1988

					Un-Arm		Un-Arm	Armoured									Un-Arm							kA(rms)	
												Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km								
2.5	0.9	0.3	1.4	–	1.24	1.8	17	14	515	580	235	295	12.1	7.41	14.5	8.87	0.106	21	27	18	24	18	24	0.19	0.29
4	1.0	0.3	1.4	–	1.24	1.8	19	16	625	720	305	400	7.41	4.61	8.9	5.52	0.102	28	36	23	30	23	30	0.30	0.46
6	1.0	0.3	1.4	–	1.24	1.8	20	18	715	860	370	510	4.61	3.08	5.54	3.69	0.097	35	45	30	38	30	39	0.46	0.70
10	1.0	0.3	–	4x0.8	1.40	1.8	22	20	720	970	465	715	3.08	1.83	3.7	2.19	0.091	46	60	39	50	40	52	0.76	1.16
16	1.0	0.3	–	4x0.8	1.40	2.0	22	21	800	1180	510	895	1.91	1.15	2.3	1.38	0.086	60	77	50	64	51	66	1.22	1.86
25	1.2	0.3	–	4x0.8	1.40	2.0	26	25	1055	1660	725	1330	1.20	0.727	1.44	0.87	0.085	76	99	63	81	70	90	1.90	2.90
35	1.2	0.3	–	4x0.8	1.40	2.0	28	27	126	2130	900	1775	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.06
50	1.4	0.4	–	4x0.8	1.56	2.2	32	31	1590	2740	1190	2345	0.641	0.387	0.77	0.464	0.083	110	145	95	125	105	135	3.80	5.80
70	1.4	0.4	–	4x0.8	1.56	2.2	36	34	1910	3710	1510	3230	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.12
95	1.6	0.4	–	4x0.8	1.72	2.4	40	39	2525	4860	1985	4335	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	11.0
120	1.6	0.5	–	4x0.8	1.88	2.4	44	42	3000	5935	2370	5320	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.9
150	1.8	0.5	–	4x0.8	1.88	2.6	48	46	3535	7190	2875	6530	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.4	17.4
185	2.0	0.6	–	4x0.8	2.04	2.8	54	52	4290	8860	3560	8070	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.1	21.5
240	2.2	0.6	–	4x0.8	2.36	3.0	61	58	5395	11100	4545	10285	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.2	27.8
300	2.4	0.7	–	4x0.8	2.52	3.4	67	66	6550	13925	5685	13100	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.8	34.8
400	2.6	0.7	–	4x0.8	2.84	3.6	75	73	8080	17845	7060	16630	0.0778	0.0470	0.196	0.0604	0.073	335	425	290	360	375	455	30.4	46.4
500	3.0	0.7	–	4x0.8	3.0	4.0	84	83	10115	22350	8980	21050	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.0	58.0

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm² will be non-compacted. • Above 16mm² compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions

• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-6 : PVC Insulated armoured & unarmoured Control cable with Copper Conductor of 1.5 mm² conf. to IS:1554 (P-1)/1988

						Un-Arm										In Duct			
No. x mm²												Ohm/km	Ohm/km	Ohm/km				kA(rms)	
2x1.5	0.8	0.3	1.4	–	1.24	1.8	13.5	11	410	170	12.1	14.5	0.110	23	20	20	0.173		
3x1.5	0.8	0.3	1.4	–	1.24	1.8	14	12	450	190	12.1	14.5	0.110	21	17	17	0.173		
4x1.5	0.8	0.3	1.4	–	1.24	1.8	15	13	495	225	12.1	14.5	0.110	21	17	17	0.173		
5x1.5	0.8	0.3	1.4	–	1.24	1.8	16	14	540	260	12.1	14.5	0.110	21	17	17	0.173		
6x1.5	0.8	0.3	1.4	–	1.24	1.8	17	15	605	292	12.1	14.5	0.110	15	13	13	0.173		
7x1.5	0.8	0.3	1.4	–	1.24	1.8	17	15	620	315	12.1	14.5	0.110	14	13	13	0.173		
10x1.5	0.8	0.3	1.4	–	1.40	1.8	21	18	840	430	12.1	14.5	0.110	13	11	11	0.173		
12x1.5	0.8	0.3	–	4x0.8	1.24	1.8	20	18	725	481	12.1	14.5	0.110	12	10	10	0.173		
14x1.5	0.8	0.3	–	4x0.8	14	1.8	21	19	820	535	12.1	14.5	0.110	11	10	10	0.173		
16x1.5	0.8	0.3	–	4x0.8	1.4	1.8	22	20	900	595	12.1	14.5	0.110	11	9	9	0.173		
19x1.5	0.8	0.3	–	4x0.8	1.4	2.0	23	22	985	695	12.1	14.5	0.110	10	9	9	0.173		
24x1.5	0.8	0.3	–	4x0.8	1.4	2.0	26	25	1215	860	12.1	14.5	0.110	9	8	8	0.173		
27x1.5	0.8	0.3	–	4x0.8	1.4	2.0	27	26	1290	930	12.1	14.5	0.110	9	8	8	0.173		
30x1.5	0.8	0.3	–	4x0.8	1.4	2.0	28	26	1390	101.	12.1	14.5	0.110	8	7	7	0.173		
37x1.5	0.8	0.3	–	4x0.8	1.4	2.0	30	28	1600	1200	12.1	14.5	0.110	8	7	7	0.173		
44x1.5	0.8	0.3	–	4x0.8	1.56	2.0	33	32	1870	1410	12.1	14.5	0.110	7	6	6	0.173		
52x1.5	0.8	0.4	–	4x0.8	1.56	2.2	35	34	2135	1655	12.1	14.5	0.110	7	6	6	0.173		
61x1.5	0.8	0.4	--	4x0.8	1.56	2.2	37	36	2395	1895	12.1	14.5	0.110	6	6	6	0.173		

- The above data is indicative & may be changed without prior information. • Above 16mm² compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions

• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-7 PVC Insulated armoured & unarmoured Control cable with Copper Conductor of 2.5 mm^2 conf. to IS:1554 (P-1)/1988

No. of cores x Area	Thick. of PVC Insulation	Thick of Inner Sheath	Dimension of Armour														
						Un-Arm		Un-Arm	Armoured	Unarmoured							
No. x mm^2											Ohm/km	Ohm/km	Ohm/km				kA(rms)
2 x2.5	0.9	0.3	1.4	–	1.24	1.8	15	12.5	480	215	7.41	8.87	0.106	32	27	27	0.288
3 x2.5	0.9	0.3	1.4	–	1.24	1.8	16	13.0	520	250	7.41	8.87	0.106	27	24	24	0.288
4 x2.5	0.9	0.3	1.4	–	1.24	1.8	17	14	605	295	7.41	8.87	0.106	27	24	24	0.288
5 x2.5	0.9	0.3	1.4	–	1.24	1.8	18	15	675	345	7.41	8.87	0.106	27	24	24	0.288
6 x2.5	0.9	0.3	1.4	–	1.24	1.8	19	17	755	395	7.41	8.87	0.106	21	18	18	0.288
7 x2.5	0.9	0.3	1.4	–	1.24	1.8	19	17	775	450	7.41	8.87	0.106	20	17	17	0.288
10x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	22	21	895	590	7.41	8.87	0.106	18	15	15	0.288
12x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	23	22	970	695	7.41	8.87	0.106	17	14	14	0.288
14x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	24	23	1075	765	7.41	8.87	0.106	16	13	13	0.288
16x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	25	24	1185	850	7.41	8.87	0.106	15	12	12	0.288
19x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	26	25	1830	975	7.41	8.87	0.106	14	12	12	0.288
24x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	30	29	1600	1205	7.41	8.87	0.106	13	11	11	0.288
27x2.5	0.9	0.3	–	4 x0.8	1.40	2.0	31	29	1745	1320	7.41	8.87	0.106	12	10	10	0.288
30x2.5	0.9	0.3	–	4 x0.8	1.56	2.0	32	30	1900	1435	7.41	8.87	0.106	12	10	10	0.288
37x2.5	0.9	0.4	–	4 x0.8	1.56	2.2	35	33	2215	1760	7.41	8.87	0.106	11	9	9	0.288
44x2.5	0.9	0.4	–	4 x0.8	1.56	2.2	38	37	2595	2070	7.41	8.87	0.106	10	9	9	0.288
52x2.5	0.9	0.4	–	4 x0.8	1.56	2.2	40	39	2920	2375	7.41	8.87	0.106	10	8	8	0.288
61x2.5	0.9	0.4	-	4 x0.8	1.56	2.2	42	41	3315	2725	7.41	8.87	0.106	9	8	8	0.288

- The above data is indicative & may be changed without prior information.
- Conductor can be Solid or stranded conductor

Operating Conditions

- Ambient Air Temp.: 40°C
- Ground temp.: 30°C
- Depth of laying: 75cm
- Thermal resistivity of soil : 150°C cm/W

Table 8 : Group Rating Factors for Circuits for Three Single Core Cables in Trefoil and Touching Horizontal Formation laid Direct in Ground

No. of Circuit					60 cm
2	0.78	0.81	0.85	0.88	0.90
3	0.68	0.71	0.77	0.81	0.83
4	0.61	0.65	0.72	0.76	0.79
6	0.53	0.58	0.66	0.71	0.76
8	0.50	0.64	0.62	0.67	0.72

Table 9 : Rating Factors for Groups of Twin and Multicore Cables laid Direct in Ground in Tier Formation

No. of Circuit	Touching				60 cm
4	0.6	0.67	0.73	0.76	0.78
6	0.52	0.58	0.63	0.67	0.69
8	0.47	0.51	0.57	0.59	0.61

Table 10: Rating Factor for Variation in thermal resistivity of soil (multicore cables laid Direct in the Ground).

Number area of conductor mm²	For values of thermal resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.10	1.05	1.0	0.92	0.86	0.81
2.5	1.10	1.05	1.0	0.95	0.86	0.81
4	1.10	1.05	1.0	0.92	0.86	0.81
6	1.10	1.05	1.0	0.92	0.86	0.81
10	1.10	1.6	1.0	0.92	0.85	0.8
16	1.12	1.06	1.0	0.91	0.84	0.79
25	1.14	1.08	1.0	0.91	0.84	0.78
35	1.15	1.08	1.0	0.91	0.84	0.77
50	1.15	1.08	1.0	0.91	0.84	0.77
70	1.15	1.08	1.0	0.9	0.83	0.76
95	1.15	1.08	1.0	0.9	0.83	0.76
120	1.17	1.09	1.0	0.9	0.82	0.76
150	1.17	1.09	1.0	0.9	0.82	0.76
185	1.18	1.09	1.0	0.89	0.81	0.75
240	1.18	1.09	1.0	0.89	0.81	0.75
300	1.18	1.09	1.0	0.89	0.81	0.75
400	1.19	1.1	1.0	0.89	0.81	0.75
500	1.21	1.1	1.0	0.88	0.80	0.74
630	1.22	1.1	1.0	0.88	0.80	0.74

Table 10: Rating Factor for Variation in thermal resistivity of soil three single core cables laid Direct in the ground (three cables in trefoil touching)

Number area of conductor mm²	For values of thermal resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.18	1.09	1.0	0.90	0.82	0.76
2.5	1.18	1.09	1.0	0.90	0.82	0.76
4	1.18	1.09	1.0	0.90	0.82	0.76
6	1.18	1.09	1.0	0.90	0.82	0.76
10	1.18	1.09	1.0	0.89	0.81	075
16	1.19	1.09	1.0	0.89	0.81	0.74
25	1.19	1.09	1.0	0.88	0.80	0.74
35	1.2	1.09	1.0	0.88	0.80	0.74
50	1.2	1.1	1.0	0.88	0.80	0.74
70	1.21	1.1	1.0	0.88	0.80	0.74
95	1.22	1.1	1.0	0.88	0.80	0.74
120	1.22	1.1	1.0	0.88	0.79	0.74
150	1.22	1.1	1.0	0.88	0.79	0.73
185	1.22	1.1	1.0	0.88	0.79	0.73
240	1.22	1.1	1.0	0.88	0.79	0.73
300	1.22	1.1	1.0	0.88	0.79	0.72
400	1.24	1.11	1.0	0.88	0.79	0.72
500	1.24	1.11	1.0	0.88	0.79	0.72
630	1.24	1.11	1.0	0.88	0.79	0.72

Table 12: Rating Factor for Variation in Dept. of Laying in Ground

Dept. of laying (cm)	75	90	105	120	150	180 & Above
Rating Factor upto 25mm²	1	0.99	0.98	0.97	0.96	0.95
Rating Factor upto 25mm² and upto 300mm²	1	0.98	0.97	0.96	0.94	0.93
Rating Factor above 300mm²	1	0.97	0.96	0.95	0.92	0.91

0.358
0.358

Table 13: Rating Factors for variation in Ambient Air Temperature

Air temp °C	15	20	25	30	35	40	45	50	55
Rating Factor	1.4	1.32	1.25	1.16	1.09	1.0	0.9	0.8	0.68

Table 14: Rating Factors for variation in Ground Temperature

Group temp °C	15	20	25	30	35	40	45	50	55
Rating Factor	1.17	1.12	1.06	1.0	0.94	0.87	0.79	0.71	0.61

Table 15 A: Rating Factor for multicore cables laid on open racks in air: Cables laid on cable trays exposed to air, the cables spaced by one cable diameter & trays in tiers by 300mm. The clearance between the wall & the cable is 25mm

No. of Racks	No. of cables per Rack			
	2	3	6	9
1	0.98	0.96	0.93	0.92
2	0.95	0.93	0.9	0.89
3	0.94	0.92	0.89	0.88
6	0.93	0.9	0.87	0.86

Table 15 B: Rating Factor for multicore cables laid on open racks in air: Cables laid on cable trays exposed to air, the cables are touching & trays in tiers by 300mm. The clearance between the wall & the cable is 25mm.

No. of Racks	No. of cables per Rack			
	2	3	6	9
1	0.84	0.8	0.75	0.73
2	0.8	0.76	0.71	0.69
3	0.78	0.74	0.7	0.68
6	0.76	0.72	0.68	0.66

Table 15 C: Rating Factor for single core cable in trefoil circuits laid on open racks in air, Cables laid on cable trays exposed to air, the trefoil group spaced by two cable diameter & tray in tier by 300mm. The clearance between the wall & the cable is 25mm.

No. of Racks	No. of cables per Rack		
	1	2	3
1	1	0.98	0.96
2	1	0.95	0.93
3	1	0.94	0.92
6	1	0.93	0.90

Table 16 : Rating factor for Groups of Twin and Multicore Cables laid Direct in Ground in Horizontal Formation

No. of Racks	No. of cables per Rack				
	Touching	15cm	30cm	45cm	60cm
2	0.79	0.82	0.87	0.9	0.91
3	0.69	0.75	0.79	0.83	0.86
4	0.62	0.69	0.74	0.79	0.82
6	0.54	0.61	0.69	0.75	0.78
8	0.5	0.57	0.66	0.72	0.76

Table 17 Rating Factors for Circuits of Two Single Core Cables, Side by Side and Touching, Horizontal Formation, Laid Direct in Ground

No. of Circuits	Spacing (Between Centres of Circuits)				
	Touching	15cm	30cm	45cm	60cm
2	0.79	0.86	0.91	0.93	0.95
3	0.69	0.78	0.84	0.88	0.91
4	0.64	0.73	0.81	0.86	0.88
6	0.56	0.67	0.77	0.83	0.87
8	0.51	0.65	0.75	0.82	0.86

AVERCAB®
CABLE

XLPE INSULATED ARMOURED CABLES

Application
- Indoors or Outdoors in cable ducts, cable trays, conduits or underground locations under mechanical stresses in power and switching stations.
- Local distribution systems, Industrial and Commercial units for basic power & lighting purpose.

Standards	BS 5467, IEC 60502-1& VDE 0276
Operating Temperature	90° C
Short Circuit Temp.	250° C
Working Voltage	600 / 1000 Volts
Test Voltage	3 KV r m s for 5 minutes

CONSTRUCTION

Conductor Aluminium / Annealed plain copper solid* / stranded conductor conform to BS 6360 and IEC 60228 Class 2 (Circular / Sector shaped)

Insulation Cross linked polyethylene (XLPE)

Core Colour

Single core	Red, Yellow, Blue, Black, Grey or Natural
2 Core	Red , Black
3 Core	Red , Yellow , Blue
4 Core	Red , Yellow, Blue, Black
5 Core	Red , Yellow, Blue, Black & Grey
6 Core & above	Blue, Yellow and remaining core Grey each layer.

Assembly Insulated conductors are laid up together, if necessary interstices may be filled with fillers.

Fillers Non-hygroscopic Poly propylene fillers are included between laid up cores wherever required.

A separator tape of non-hygroscopic poly propylene material is applied over laid up core wherever necessary.

Bedding Extruded PVC compatible with operating temperature

Armour For Single Core - Aluminium round wire / flat wire. For Multicore - Galvanised Steel round wire / flat wire / tape.

Outer Sheath Extruded PVC / Special PVC compound such as Flame Retardant (FR), Flame Retardant Low Smoke (FRLS), Low Smoke Zero Halogen (LSOH) can be used for outer sheath to suit a variety of environment and fire risk conditions. Flamabillity test confirms to IEC 332 & Swidish chimeny. For installation where fire and associated problems such as emission of smoke and toxic fumes offer a serious potential threat, special LSF (Low smoke & fumes) compound can be provided. LSF compound is Halogen free (Flourine, Chlorine, Bromine) when tested as per BS 6425 (Pt 1) & IEC 60754 (Pt 1). The acid gas evolved during combustion is less than 0.5% by weight of material.

Minimum Bending radius :12 times the cable diameter

Admissible Pulling Force : Aluminium-30/mm^2

ISO 9001 COMPANY

Note : Unarmoured cables construction details available upon request.
*Aluminium - upto 10 mm^2 Copper - upto 6 mm^2

**Modification which serve to improve our products will be implemented without notice.

Advantages

Advantages of XLPE cable as compared to thermoplastic cable like PVC are listed below:

- Higher power rating.
- Higher emergency overload rating.
- Higher short circuit rating.
- Higher insulation resistance (100 times more than that of PVC).
- Higher resistance to moisture (100 times more than that of PVC).
- Better resistance to surge currents.
- Capacity to withstand localised hot spot temparature (very important for industrial wiring in steel power stations etc.)
- Resistant to chemicals and corrosive gases etc. - hence suitable for installation in polluted atmosphere.
- Resistant to vibration, impact etc. - no hazard of hot deformation.
- Quick method of joining and termination with simple, non-expensive accessories.
- Longer cable life.

COMPARATIVE CURRENT RATINGS OF 1.1 KV PVC AND XLPE CABLES continues current rating of 3 & 4 core cables armoured & unarmoured laid Direct in the ground or in air 650/1100V Aluminium conductor.

NOMINAL AREA OF CONDUCTOR	3 or 4 core cables to IS:1554/1/1988 (PVC)				3 or 4 core cables to IS:7098/1/1988 (XLPE)			
	In Ground	In Air	Approx. Voltage Drop	kA	In Ground	In Air	Approx. Voltage Drop	kA
(mm^2)	(Amps)	(Amps)	(mv/Amps/m)	Sec.	(Amps)	(Amps)	(mv/Amps/m)	Sec.
16	60	51	4.0	1.22	73	70	4.2	1.50
25	76	70	2.5	1.90	94	96	2.7	2.35
35	92	86	1.8	2.66	113	117	1.9	3.29
50	110	105	1.3	3.80	133	142	1.4	4.70
70	135	130	0.9	5.32	164	179	0.99	6.58
95	165	155	0.7	7.22	196	221	0.72	8.93
120	185	180	0.5	9.12	223	257	0.58	11.28
150	210	205	0.5	11.40	249	292	0.48	14.10
185	235	240	0.4	14.06	282	337	0.39	17.39
240	275	280	0.3	18.24	326	399	0.31	22.56
300	305	315	0.2	22.80	367	456	0.26	28.20
400	335	375	0.2	30.40	418	530	0.21	37.60

Table-1: Single Core XLPE insulated armoured & unarmoured cable with Aluminium/ Copper Conductor conf. to IS: 7098(P-1)/1988

Area	Thickness of PVC Insulation		Dimension of Armour		Thickness of PVC Outer sheath		Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp. 70°C		Reactance at 50Hz.		Current rating						Short Circuit rating for 1 Sec.	
	Arm	Un-Arm	Wire	Strip	Arm	Un-Arm	Arm	Un-Arm	Armoured		Un-Armoured						Arm	Un-Arm	Direct in Ground		in duct		in Air			
mm^2	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km	kg/km	kg/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km	Amps	Amps	Amps	Amps	Amps	Amps	kA(rms)	
									Al	Cu	Al	Cu	Al	Cu	Al	Cu			Al	Cu	Al	Cu	Al	Cu	Al	Cu
1.5	1.0	0.7	–	–	–	1.8	1.8	7	–	–	–	66	–	12.1	–	15.43	–	0.158	–	25	–	21	–	22	–	0.21
2.5	1.0	0.7	–	–	–	1.8	1.8	7.5	–	–	–	80	–	7.41	–	9.45	–	0.146	–	34	–	33	–	30	–	0.36
4	1.0	0.7	1.4	–	1.24	1.8	1.8	8	130	155	75	100	7.41	4.61	9.50	5.88	0.152	0.136	35	44	34	43	30	39	0.38	0.57
6	1.0	0.7	1.4	–	1.24	1.8	1.8	9	155	190	90	125	4.61	3.08	5.91	3.93	0.143	0.127	44	56	42	55	39	49	0.56	086
10	1.0	1.7	1.4	–	1.24	1.8	1.8	10	175	235	105	170	3.08	1.83	3.95	2.33	0.132	0.118	58	74	58	73	53	67	0.94	1.43
16	1.0	0.7	1.4	–	1.24	1.8	1.8	11	210	300	130	225	1.91	1.15	2.45	1.47	0.125	0.112	75	97	74	95	72	92	1.50	2.29
25	1.2	0.9	1.4	–	1.24	1.8	1.8	12	275	425	170	320	1.20	0.727	1.54	0.927	0.119	0.107	93	125	96	125	94	123	2.35	3.58
35	1.2	0.9	1.4	–	1.24	1.8	1.8	13	325	540	205	420	0.868	0.524	1.11	0.668	0.114	0.102	114	143	114	143	118	146	3.29	5.01
50	1.3	1.0	1.4	--	1.24	1.8	1.8	15	385	670	260	545	0.641	0.387	0.822	0.494	0.109	0.100	138	180	139	180	152	203	4.70	7.15
70	1.4	1.1	1.4	–	1.24	1.8	1.8	17	485	910	345	770	0.443	0.268	0.568	0.342	0.101	0.092	170	222	169	217	194	260	6.58	10.01
95	1.4	1.1	–	4x 0.8	1.40	1.8	1.8	18	550	1130	430	1010	0.320	0.193	0.411	0.247	0.095	0.089	203	265	199	255	238	319	8.93	13.6
120	1.5	1.2	–	4x 0.8	1.40	1.8	1.8	20	650	1380	535	1265	0.253	0.153	0.325	0.196	0.093	0.087	231	301	225	200	276	370	11.28	17.2
150	1.7	1.4	–	4x 0.8	1.40	2.0	2.0	22	755	1660	655	1565	0.206	0.124	0.265	0.159	0.092	0.088	258	337	246	309	319	425	14.1	21.5
185	1.9	1.6	–	4x 0.8	1.40	2.0	2.0	25	915	2030	785	1915	0.164	0.0991	0.211	0.1281	0.089	0.085	292	379	273	341	367	488	17.4	26.5
240	2.0	1.7	–	4x 0.8	1.40	2.0	2.0	27	1115	2540	990	2410	0.125	0.0754	0.262	0.0986	0.087	0.083	338	436	310	382	435	576	22.6	34.3
300	2.1	1.8	–	4x 0.8	1.56	2.0	2.0	29	1350	3185	1160	2985	0.100	0.0601	0.130	0.0797	0.085	0.081	379	486	342	417	498	656	28.2	42.9
400	2.4	2.0	–	4x 0.8	1.56	2.2	2.2	33	1680	4050	1515	3895	0.0778	0.0470	0.1023	0.0639	0.083	0.080	430	539	366	443	565	749	37.6	57.2
500	2.6	2.2	–	4x 0.8	1.56	2.2	2.2	37	2060	5050	1890	4890	0.0605	0.0366	0.0809	0.0518	0.082	0.079	487	597	440	480	640	847	47.0	71.5
630	2.8	2.4	–	4x 0.8	1.72	2.2	2.2	41	2590	6480	2325	6285	0.0469	0.0283	0.0644	0.0424	0.080	0.077	553	657	499	518	727	954	59.2	90.1
800	3.1	2.6	–	4x 0.8	1.88	2.4	2.4	46	3210	7970	2930	7965	0.0367	0.0221	0.0524	0.0358	0.079	0.077	626	693	565	540	822	1037	75.2	114.4
1000	3.3	2.8	--	4x 0.8	2.04	2.6	2.6	51	3955	10110	3650	9705	0.0291	0.0176	0.0438	0.0311	0.075	0.077	703	735	634	574	923	1125	94.0	143.0

AVERCAB CABLE

Table-2: 2 Core XLPE Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:7098 (P-1)/1988

							Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp. 70°C		Reactance at 50Hz	Current rating						Short Circuit rating for 1 Sec.	
				Strip	Arm	Un-Arm	Arm	Un-Arm	Armoured																	
mm^2									kg/km	kg/km			Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km								kA(rms)	
									Al	Cu			Al	Cu	Al	Cu									Al	Cu
1.5	0.7	0.3	1.4	–	1.24	1.8	13	11	–	365	–	150	–	12.1	–	15.43	0.106	–	30	–	24	–	27	–	0.21
2.5	0.7	0.3	1.4	–	1.24	1.8	14	12	–	405	–	185	–	7.41	–	9.45	0.099	–	38	–	32	–	36	–	0.36
4	0.7	0.3	1.4	–	1.24	1.8	15	13	435	485	190	240	7.41	4.61	9.50	5.88	0.093	36	51	32	41	30	48	0.38	0.57
6	0.7	0.3	1.4	–	1.24	1.8	16	14	490	560	230	300	4.61	3.08	5.91	3.93	0.089	46	63	41	52	39	62	0.56	0.86
10	0.7	0.3	1.4	–	1.24	1.8	17	15	460	650	250	415	3.08	1.83	3.95	2.33	0.084	63	85	54	69	53	84	0.94	1.43
16	0.7	0.3	1.4	–	1.4	1.8	18	16	585	705	290	440	1.91	1.15	2.42	1.47	0.081	84	110	69	90	84	111	1.50	2.29
25	0.9	0.3	–	4x0.8	1.4	2.0	19	18	600	900	325	625	1.20	0.727	1.54	0.927	0.081	108	143	87	116	107	144	2.35	3.58
35	0.9	0.3	–	4x0.8	1.4	2.0	21	19	705	1145	400	825	0.868	0.524	1.11	0.668	0.079	129	171	105	139	131	178	3.29	5.01
50	1.0	0.3	–	4x0.8	1.4	2.0	23	21	825	1410	500	1060	0.641	0.387	0.822	0.494	0.078	153	202	125	165	158	215	4.70	7.15
70	1.1	0.3	–	4x0.8	1.56	2.0	26	24	1065	1925	690	1500	0.443	0.268	0.568	0.342	0.0742	188	247	154	203	200	269	6.58	10.01
95	1.1	0.4	–	4x0.8	1.56	2.2	29	27	1300	2450	880	2000	0.320	0.193	0.411	0.247	0.0725	225	297	185	244	235	333	8.93	13.6
120	1.2	0.4	–	4x0.8	1.56	2.2	31	30	1540	3015	1080	2550	0.253	0.153	0.325	0.197	0.0722	239	338	228	279	246	385	11.3	17.2
150	1.4	0.4	–	4x0.8	1.72	2.2	34	32	1800	3625	1330	3100	0.206	0.124	0.265	0.160	0.0727	274	379	252	313	269	439	14.1	21.5
185	1.6	0.5	–	4x0.8	1.72	2.4	37	35	2165	4400	1600	3800	0.164	0.0991	0.211	0.128	0.072	314	427	288	355	308	507	17.4	26.5
240	1.7	0.5	–	4x0.8	1.88	2.6	41	40	2600	5500	2000	4800	0.125	0.0754	0.162	0.989	0.0713	365	493	330	411	364	598	22.6	34.3
300	1.8	0.6	–	4x0.8	2.04	2.8	45	43	3275	6990	2520	6100	0.100	0.0601	0.130	0.08	0.071	405	553	366	462	409	682	28.2	42.9
400	2.0	0.6	–	4x0.8	2.36	3.0	51	49	4040	8825	3120	7900	0.0778	0.0470	0.102	0.0641	0.070	439	624	414	522	470	785	37.6	57.2
500	2.2	0.7	–	4x0.8	2.52	3.4	56	54	4950	11000	3900	10000	0.0605	0.0366	0.081	0.0519	0.070	498	707	469	592	533	890	47.0	71.5
630	2.4	0.7	--	4x0.8	2.68	3.6	62	60	6060	13800	4950	12600	0.0469	0.0283	0.0644	0.0424	0.0697	565	804	533	673	606	1012	59.2	90.1

Table-3: 3 Core XLPE Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:7098 (P-1)/1988

							Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp. 70°C		Reactance at 50Hz	Current rating						Short Circuit rating for 1 Sec.	
				Strip	Arm	Un-Arm	Arm	Un-Arm	Armoured																	
mm^2									kg/km	kg/km			Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km								kA(rms)	
									Al	Cu			Al	Cu	Al	Cu									Al	Cu
1.5	0.7	0.3	1.4	–	1.24	1.8	14	12	–	400	–	170	–	12.1	–	15.43	0.106	–	22	–	20	–	23	–	0.21
2.5	0.7	0.3	1.4	–	1.24	1.8	15	13	–	465	–	215	–	7.41	–	9.45	0.099	–	29	–	27	–	31	–	0.36
4	0.7	0.3	1.4	–	1.24	1.8	16	14	475	545	205	280	7.41	4.61	9.50	5.88	0.093	34	38	28	35	29	42	0.38	0.57
6	0.7	0.3	1.4	–	1.24	1.8	17	15	550	655	235	360	4.61	3.08	5.91	3.93	0.089	42	47	36	44	38	52	0.56	0.86
10	0.7	0.3	1.4	–	1.24	1.8	19	17	645	830	325	510	3.08	1.83	3.95	2.33	0.084	55	63	47	59	50	72	0.94	1.43
16	0.7	0.3	–	4x0.8	1.24	1.8	19	17	575	865	335	625	1.91	1.15	2.42	1.47	0.081	71	93	58	75	71	94	1.50	2.29
25	0.9	0.3	–	4x0.8	1.4	2.0	21	20	740	1195	450	900	1.20	0.727	1.54	0.927	0.081	91	119	74	97	93	123	2.35	3.58
35	0.9	0.3	–	4x0.8	1.4	2.0	23	22	900	1560	550	1200	0.868	0.524	1.11	0.668	0.079	109	142	88	116	114	151	3.29	5.01
50	1.0	0.3	–	4x0.8	1.4	2.0	26	24	1075	1950	720	1530	0.641	0.387	0.822	0.494	0.078	129	169	105	138	138	184	4.70	7.15
70	1.1	0.4	–	4x0.8	1.56	2.2	30	29	1400	2700	990	2220	0.443	0.268	0.568	0.342	0.0742	158	208	130	170	174	231	6.58	10.01
95	1.1	0.4	–	4x0.8	1.56	2.2	33	31	1720	3500	1260	2910	0.320	0.193	0.411	0.247	0.0725	191	249	157	205	215	285	8.93	13.6
120	1.2	0.4	–	4x0.8	1.56	2.2	36	34	2030	4250	1440	3660	0.253	0.153	0.325	0.197	0.0722	217	283	180	234	249	331	11.3	17.2
150	1.4	0.5	–	4x0.8	1.72	2.4	40	38	2430	5200	1800	4500	0.206	0.124	0.265	0.160	0.0727	243	317	202	264	285	378	14.1	21.5
185	1.6	0.5	–	4x0.8	1.88	2.6	44	42	2950	6350	2220	5610	0.164	0.0991	0.211	0.128	0.072	276	358	230	298	330	436	17.4	26.5
240	1.7	0.6	–	4x0.8	2.04	2.8	50	48	3750	8100	2700	7200	0.125	0.0754	0.162	0.989	0.0713	319	413	267	345	391	514	22.6	34.3
300	1.8	0.6	–	4x0.8	2.2	3.0	55	53	4440	9990	3600	9000	0.100	0.0601	0.130	0.08	0.071	360	462	301	387	447	586	28.2	42.9
400	2.0	0.7	–	4x0.8	2.52	3.4	61	59	5550	12825	4500	11700	0.0778	0.0470	0.102	0.0641	0.070	406	521	342	445	461	674	37.6	57.2
500	2.2	0.7	–	4x0.8	2.68	3.6	68	66	6600	15900	5550	14700	0.0605	0.0366	0.081	0.0519	0.070	460	591	388	505	523	764	47.0	71.5
630	2.4	0.7	--	4x0.8	2.84	3.8	75	73	8400	20100	7200	18900	0.0469	0.0283	0.0644	0.0424	0.0697	523	571	440	573	594	868	59.2	90.1

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm^2 will be non-compacted. • Above 16mm^2 compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions

• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-4: $3^{1}/_{2}$ Core PVC Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:1554 (P-1)/1988

							Un-Arm			Armoured															
														Ohm/km	Ohm/km	Ohm/km	Ohm/km	Ohm/km							kA(rms)
25	16	0.9	0.7	0.3	4.0 x 0.8	1.40	2.0	23	22	860	1400	540	1080	1.20	0.727	1.54	0.927	0.081	91	119	74	97	93	123	2.35	3.58
35	16	0.9	0.7	0.3	4.0 x 0.8	1.40	2.0	25	24	1000	1760	660	1440	0.868	0.524	1.11	0.668	0.079	109	142	88	116	114	151	3.29	5.01
50	25	1.0	0.9	0.3	4.0 x 0.8	1.40	2.0	27	26	1235	2225	810	1890	0.641	0.387	0.822	0.494	0.078	129	169	105	138	138	184	4.70	7.15
70	35	1.1	0.9	0.4	4.0 x 0.8	1.56	2.2	32	31	1600	3100	1110	2700	0.443	0.268	0.568	0.342	0.0742	158	208	130	170	174	231	6.58	10.01
95	50	1.1	1	0.4	4.0 x 0.8	1.56	2.2	35	34	1900	4000	1440	3510	0.320	0.193	0.411	0.247	0.0725	191	249	157	205	214	285	8.93	13.6
120	70	1.2	1.1	0.4	4.0 x 0.8	1.72	2.2	39	38	2390	5040	1710	4440	0.253	0.153	0.325	0.197	0.0722	217	283	180	234	249	331	11.28	17.2
150	70	1.4	1.1	0.5	4.0 x 0.8	1.72	2.4	43	42	2770	5975	2160	5400	0.206	0.124	0.265	0.160	0.0727	243	317	202	264	285	378	14.1	21.5
185	95	1.6	1.1	0.5	4.0 x 0.8	1.88	2.6	48	45	3400	7380	2610	6690	0.164	0.0991	0.211	0.128	0.072	276	358	230	298	330	436	17.4	26.5
240	120	1.7	1.2	0.6	4.0 x 0.8	2.04	2.8	54	52	4200	9300	3420	8550	0.125	0.0754	0.162	0.0989	0.0713	319	413	267	345	391	514	22.6	34.3
300	150	1.8	1.4	0.6	4.0 x 0.8	2.20	3.0	59	56	5100	11400	4140	10620	0.100	0.0601	0.130	0.08	0.071	360	462	301	387	447	586	28.2	42.9
400	185	2.0	1.6	0.7	4.0 x 0.8	2.52	3.4	67	65	6300	14820	5400	13900	0.0778	0.0470	0.102	0.0641	0.070	406	521	342	445	461	674	37.6	57.2
500	240	2.2	1.7	0.7	4.0 x 0.8	2.68	3.6	74	73	7770	18300	6660	17400	0.0605	0.0366	0.081	0.0519	0.070	460	591	388	505	523	764	47.0	71.5
630	300	2.4	1.8	0.7	4.0 x 0.8	3.00	4.0	84	82	9900	23400	8100	22200	0.0605	0.0366	0.0644	0.0424	0.0697	523	671	440	573	594	868	59.2	90.1

- The above data is indicative & may be changed without prior information.
- Conductor can be Solid or stranded conductor

Operating Conditions
- Ambient Air Temp.: 40°C
- Ground temp.: 30°C
- Depth of laying: 75cm
- Thermal resistivity of soil : 150°C cm/W

Table-5: 4 Core XLPE Insulated armoured & unarmoured cable with Aluminium / Copper Conductor conf. to IS:7098 (P-1)/1988

Area	Thickness of XLPE Ins.	Thick. of Inner sheath	Dimension of Armour		Thickness of PVC Outer sheath		Approx. overall diameter		Approx. Net Wt. of Cable				Max D.C. resistance at 20°C		A.C. resistance at operating temp. 70°C		Reactance at 50Hz	Current rating						Short Circuit rating for 1 Sec.	
				Strip	Arm	Un-Arm	Arm	Un-Arm	Armoured		Un-Armoured							Direct in Ground		in duct		in Air			
mm²									kg/km	kg/km	kg/km	kg/km						Amps	Amps	Amps	Amps	Amps	Amps		
									Al	Cu	Al	Cu	Al	Cu	Al	Cu		Al	Cu	Al	Cu	Al	Cu	Al	Cu
1.5	0.7	0.3	1.4	–	1.24	1.8	15	12	–	440	–	200	–	12.1	–	15.43	0.106	–	22	–	20	–	23	–	0.21
2.5	0.7	0.3	1.4	–	1.24	1.8	16	13	–	515	–	250	–	7.41	–	9.45	0.099	–	29	–	27	–	31	–	0.36
4	0.7	0.3	1.4	–	1.24	1.8	17	15	530	625	240	335	7.41	4.61	9.50	5.88	0.093	34	38	28	35	29	42	0.38	0.57
6	0.7	0.3	1.4	–	1.24	1.8	18	16	620	750	290	435	4.61	3.08	5.91	3.93	0.089	42	47	36	44	38	52	0.56	0.86
10	0.7	0.3	1.4	–	1.4	1.8	21	18	750	1000	375	625	3.08	1.83	3.95	2.33	0.084	55	63	47	59	50	72	0.94	1.43
16	0.7	0.3	–	4x0.8	1.4	1.8	21	19	695	1050	405	795	1.91	1.15	2.42	1.47	0.081	71	93	58	75	71	94	1.50	2.29
25	0.9	0.3	–	4x0.8	1.4	2.0	24	23	900	1500	555	1200	1.20	0.727	1.54	0.927	0.081	91	119	74	97	93	123	2.35	3.58
35	0.9	0.3	–	4x0.8	1.4	2.0	26	25	1110	1985	690	1590	0.868	0.524	1.11	0.668	0.079	109	142	88	116	114	151	3.29	5.01
50	1.0	0.3	–	4x0.8	1.56	2.0	29	28	1350	2500	900	2100	0.641	0.387	0.822	0.494	0.078	129	169	105	138	138	184	4.70	7.15
70	1.1	0.4	–	4x0.8	1.56	2.2	34	33	1740	3460	1200	2970	0.443	0.268	0.568	0.342	0.0742	158	208	130	170	174	231	6.58	10.01
95	1.1	0.4	–	4x0.8	1.56	2.2	37	36	2130	4465	1530	4000	0.320	0.193	0.411	0.247	0.0725	191	249	157	205	215	285	8.93	13.6
120	1.2	0.5	–	4x0.8	1.72	2.4	41	40	2610	5550	1800	4950	0.253	0.153	0.325	0.197	0.0722	217	283	180	234	249	331	11.3	17.2
150	1.4	0.5	–	4x0.8	1.88	2.6	46	45	3090	6800	2340	6180	0.206	0.124	0.265	0.160	0.0727	243	317	202	264	285	378	14.1	21.5
185	1.6	0.5	–	4x0.8	2.04	2.8	51	50	3750	8300	3000	7500	0.164	0.0991	0.211	0.128	0.072	276	358	230	298	330	436	17.4	26.5
240	1.7	0.6	–	4x0.8	2.20	3.0	58	56	4770	10500	3900	9630	0.125	0.0754	0.162	0.989	0.0713	319	413	267	345	391	514	22.6	34.3
300	1.8	0.7	–	4x0.8	2.36	3.2	64	62	5700	13000	4590	12335	0.100	0.0601	0.130	0.08	0.071	360	462	301	387	447	586	28.2	42.9
400	2.0	0.7	–	4x0.8	2.68	3.6	71	70	7200	16900	6000	15750	0.0778	0.0470	0.102	0.0641	0.070	406	521	342	445	461	674	37.6	57.2
500	2.2	0.7	–	4x0.8	2.84	3.8	80	79	8880	20820	7500	19000	0.0605	0.0366	0.081	0.0519	0.070	460	591	388	505	523	764	47.0	71.5
630	2.4	0.7	--	4x0.8	3.00	4.0	89	88	10800	27000	9600	25200	0.0469	0.0283	0.0644	0.0424	0.0697	523	671	440	573	594	868	59.2	90.1

- The above data is indicative & may be changed without prior information.
- Conductor up to 16 mm² will be non-compacted. • Above 16mm² compacted sector conductor.
- Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions
- Ambient Air Temp.: 40°C
- Ground temp.: 30°C
- Depth of laying: 75cm
- Thermal resistivity of soil : 150°C cm/W

Table-6 : XLPE Insulated armoured & unarmoured Control cable with Copper Conductor of 1.5 mm^2 conf. to IS:7098 (P-1)/1988

					Thick of PVC Outer Sheath							A.C. resistance at operating temp 70°C	Reactance at 50Hz.	Current Rating			Short circuit rating for 1 Sec.
	(Nom)	(Min)	Wire	Strip	Arm	Un-Arm								Direct in Ground	In Duct	In Air	
No. x mm^2									kg/km	kg/km	Ohm/km	Ohm/km	Ohm/km	Amps	Amps	Amps	kA(rms)
2x1.5	0.7	0.3	1.4	–	1.24	1.8	13	11	365	150	12.1	15.43	0.106	30	24	27	0.215
3x1.5	0.7	0.3	1.4	–	1.24	1.8	14	12	400	170	12.1	15.43	0.106	22	20	23	0.215
4x1.5	0.7	0.3	1.4	–	1.24	1.8	15	12	440	200	12.1	15.43	0.106	22	20	23	0.215
5x1.5	0.7	0.3	1.4	–	1.24	1.8	15	13	510	225	12.1	15.43	0.106	22	20	23	0.215
6x1.5	0.7	0.3	1.4	–	1.24	1.8	16	14	570	250	12.1	15.43	0.106	20	16	18	0.215
7x1.5	0.7	0.3	1.4	–	1.24	1.8	16	14	585	275	12.1	15.43	0.106	19	15	17	0.215
10x1.5	0.7	0.3	1.4	–	1.40	1.8	19	17	750	360	12.1	15.43	0.106	17	13	15	0.215
12x1.5	0.7	0.3	1.4	–	1.24	1.8	20	18	800	400	12.1	15.43	0.106	16	13	14	0.215
14x1.5	0.7	0.3	1.4	–	1.4	1.8	21	19	900	450	12.1	15.43	0.106	15	12	13	0.215
16x1.5	0.7	0.3	–	4x0.8	1.4	1.8	21	19	790	500	12.1	15.43	0.106	14	11	12	0.215
19x1.5	0.7	0.3	–	4x0.8	1.4	2.0	22	20	880	575	12.1	15.43	0.106	13	11	12	0.215
24x1.5	0.7	0.3	–	4x0.8	1.4	2.0	25	24	1060	725	12.1	15.43	0.106	12	10	11	0.215
27x1.5	0.7	0.3	–	4x0.8	1.4	2.0	26	24	1125	780	12.1	15.43	0.106	11	9	10	0.215
30x1.5	0.7	0.3	–	4x0.8	1.4	2.0	27	25	1200	850	12.1	15.43	0.106	11	9	10	0.215
37x1.5	0.7	0.3	–	4x0.8	1.4	2.0	28	27	1375	1000	12.1	15.43	0.106	10	8	9	0.215
44x1.5	0.7	0.3	–	4x0.8	1.4	2.0	32	30	1600	1110	12.1	15.43	0.106	9	7	9	0.215
52x1.5	0.7	0.3	–	4x0.8	1.56	2.2	33	31	1800	1350	12.1	15.43	0.106	9	7	8	0.215
61x1.5	0.7	0.4	--	4x0.8	1.56	2.2	35	34	2070	1600	12.1	15.43	0.106	8	7	8	0.215

• The above data is indicative & may be changed without prior information. • Above 16mm^2 compacted sector conductor.
• Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions
• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Table-7 : XLPE Insulated armoured & unarmoured Control cable with Copper Conductor of 1.5 mm^2 conf. to IS:7098 (P-1)/1988

					Thick of PVC Outer Sheath							A.C. resistance at operating temp 70°C	Reactance at 50Hz.	Current Rating			Short circuit rating for 1 Sec.
	(Nom)	(Min)	Wire	Strip	Arm	Un-Arm								Direct in Ground	In Duct	In Air	
No. x mm^2									kg/km	kg/km	Ohm/km	Ohm/km	Ohm/km	Amps	Amps	Amps	kA(rms)
2x1.5	0.7	0.3	1.4	–	1.24	1.8	14	12	405	185	7.41	9.45	0.099	38	32	36	0.358
3x1.5	0.7	0.3	1.4	–	1.24	1.8	15	13	465	215	7.41	9.45	0.099	29	27	31	0.358
4x1.5	0.7	0.3	1.4	–	1.24	1.8	16	13	515	250	7.41	9.45	0.099	22	20	23	0.358
5x1.5	0.7	0.3	1.4	–	1.24	1.8	17	14	600	295	7.41	9.45	0.099	22	20	23	0.358
6x1.5	0.7	0.3	1.4	–	1.24	1.8	18	15	660	325	7.41	9.45	0.099	25	21	24	0.358
7x1.5	0.7	0.3	1.4	–	1.24	1.8	18	15	700	350	7.41	9.45	0.099	24	20	23	0.358
10x1.5	0.7	0.3	–	4x0.8	1.24	1.8	20	19	750	480	7.41	9.45	0.099	21	18	20	0.358
12x1.5	0.7	0.3	–	4x0.8	1.4	1.8	21	20	825	550	7.41	9.45	0.099	20	17	19	0.358
14x1.5	0.7	0.3	–	4x0.8	1.4	1.8	22	20	925	600	7.41	9.45	0.099	19	16	17	0.358
16x1.5	0.7	0.3	–	4x0.8	1.4	1.8	23	22	1000	700	7.41	9.45	0.099	18	15	16	0.358
19x1.5	0.7	0.3	–	4x0.8	1.4	2.0	24	23	1100	800	7.41	9.45	0.099	17	14	16	0.358
24x1.5	0.7	0.3	–	4x0.8	1.4	2.0	28	26	1350	1000	7.41	9.45	0.099	16	13	15	0.358
27x1.5	0.7	0.3	–	4x0.8	1.4	2.0	28	27	1450	1050	7.41	9.45	0.099	14	12	13	0.358
30x1.5	0.7	0.3	–	4x0.8	1.4	2.0	29	28	1550	1150	7.41	9.45	0.099	14	12	13	0.358
37x1.5	0.7	0.3	–	4x0.8	1.4	2.0	31	30	1825	1400	7.41	9.45	0.099	13	11	12	0.358
44x1.5	0.7	0.4	–	4x0.8	1.56	2.0	35	34	2150	1700	7.41	9.45	0.099	12	10	12	0.358
52x1.5	0.7	0.4	–	4x0.8	1.56	2.2	37	36	2450	1950	7.41	9.45	0.099	12	10	11	0.358
61x1.5	0.7	0.4	--	4x0.8	1.56	2.2	39	38	2750	2220	7.41	9.45	0.099	11	9	11	0.358

• The above data is indicative & may be changed without prior information. • Above 16mm^2 compacted sector conductor.
• Cables can be supplied in multiple of 250/500/1000 mtrs. or as per customers requirements.

Operating Conditions
• Ambient Air Temp.: 40°C • Ground temp.: 30°C • Depth of laying: 75cm • Thermal resistivity of soil : 150°C cm/W

Group Rating Factors for Circuits for Three Single Core Cables in Trefoil formation

Table 8 A : Touching Horizontal Formation laid Direct in Ground

No. of Circuit					60 cm
2	0.78	0.81	0.85	0.88	0.90
3	0.68	0.71	0.77	0.81	0.83
4	0.61	0.65	0.72	0.76	0.79
5	0.56	0.61	0.68	0.73	0.78

Table 8 B : Cables laid in Trefoil Ducts in horizontal formation

No. of Circuit	Spacing (Between Centres of Circuits)		
	Touching	45 cm	60 cm
2	0.87	0.90	0.91
3	0.79	0.83	0.86
4	0.74	0.79	0.82
5	0.71	0.76	0.79

Table 8 C: Cables laid on Racks/Trays in covered trench with removable covers where air circulation is restricted, Trefoil are seperated by two cable dia horizontally and the trays are in tiers with 30cm. gap between them.

No. of Racks Trays in tiers	No. of Trefoils in horizontal formation		
1	0.95	0.90	0.88
2	0.90	0.85	0.83
3	0.88	0.83	0.81
6	0.86	0.81	0.79

Table 8 D : Cables laid as in'C' but open air

No. of Racks	No. of cables per Rack		
	1	2	3
1	1	0.98	0.96
2	1	0.95	0.93
3	1	0.94	0.92
6	1	0.93	0.90

Group Rating Factos for Circuits for Multi-Core Cables

Table 9 A: Cables laid inside concrete trench with removable covers, on cable trays where air circulation is restricted. The cables spaced by one cable diameter and trays in tiers by 300mm. The clearance of the cable from the wall is 25mm

No. of cables trays in tier	No. of cables				
1	0.95	0.90	0.88	0.85	0.84
2	0.90	0.85	0.83	0.81	0.80
3	0.88	0.83	0.81	0.79	0.78
6	0.86	0.81	0.79	0.77	0.76

Table 9 B : Cables laid on cable trays exposed to air, the cables spaced by one cable diameter & trays in tier by 300mm. The clearance between the wall & the cable is 25mm.

No. of Cable Trays in tiers	No. of cables per Rack			
	2	3	6	9
1	0.98	0.96	0.93	0.92
2	0.95	0.93	0.90	0.89
3	0.94	0.92	0.89	0.88
6	0.93	0.90	0.87	0.86

Table 9 C : Cables laid on cable trays exposed to air, the cables are touching & trays in tiers by 300mm. The clearance between the wall & the cable is 25mm.

No. of Cable Trays in tiers	No. of cables per Rack			
	2	3	6	9
1	0.84	0.80	0.75	0.73
2	0.80	0.76	0.71	0.69
3	0.78	0.74	0.70	0.68
6	0.76	0.72	0.68	0.66

Table 9 D : Cables laid Direct in Ground in horizontal formation

No. of Cable in group	Spacing of cables			
	Touching	15cm	30cm	45cm
2	0.79	0.82	0.87	0.90
3	0.69	0.75	0.79	0.83
4	0.62	0.69	0.74	0.79
5	0.58	0.65	0.72	0.76
6	0.54	0.61	0.69	0.75

Table 9 E : Cables laid Direct in Single way Ducts/pipes in horizontal formation.

No. of Cable in group	Spacing of cables			
	Touching	30cm	45cm	60cm
2	0.88	0.90	0.92	0.94
3	0.82	0.84	0.87	0.89
4	0.77	0.80	0.84	0.87
5	0.74	0.78	0.82	0.85
6	0.71	0.76	0.81	0.84

Table 10 : Rating Factor for variation inDept. of Laying in Ground

Dept. of laying (cm)	75	90	105	120	150	180 & Above
Rating Factor upto 25mm^2	1	0.99	0.98	0.97	0.96	0.95
Rating Factor upto 25mm^2 and upto 300mm^2	1	0.98	0.97	0.96	0.94	0.93
Rating Factor above 300mm^2	1	0.97	0.96	0.95	0.92	0.91

Table 11: Rating Factors for variation in Ambient Air Temperature

Air temp °C	15	20	25	30	35	40	45	50	55
Rating Factor	1.22	1.18	1.41	1.10	1.05	1.0	0.95	0.89	0.84

Table 12: Rating Factors for variation in Ground Temperature

Group temp °C	15	20	25	30	35	40	45	50	55
Rating Factor	1.12	1.08	1.04	1.0	0.96	0.91	0.87	0.82	0.76

Table 13 : Rating factor for variation in thermal resistivity of soil (multicore canles laid Direct in the Ground)

Nominal area of conductor mm²	For Value of thermal resistivity of soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.10	1.05	1.0	0.92	0.86	0.81
2.5	1.10	1.05	1.0	0.92	0.86	0.81
4	1.10	1.05	1.0	0.92	0.86	0.81
6	1.10	1.05	1.0	0.92	0.86	0.81
10	1.10	1.06	1.0	0.92	0.85	0.80
16	1.12	1.06	1.0	0.91	0.84	0.79
25	1.14	1.08	1.0	0.91	0.84	0.78
35	1.15	1.08	1.0	0.91	0.84	0.77
50	1.15	1.08	1.0	0.91	0.84	0.77
70	1.15	1.08	1.0	0.90	0.83	0.76
95	1.15	1.08	1.0	0.90	0.83	0.76
120	1.17	1.09	1.0	0.90	0.82	0.76
150	1.17	1.09	1.0	0.90	0.82	0.76
185	1.18	1.09	1.0	0.89	0.81	0.75
240	1.18	1.09	1.0	0.89	0.81	0.75
300	1.18	1.09	1.0	0.89	0.81	0.75
400	1.19	1.1	1.0	0.89	0.81	0.75
500	1.21	1.1	1.0	0.88	0.80	0.74
630	1.22	1.1	1.0	0.88	0.80	0.74

Table 14 : Rating factor for variation in thermal resistivity of soil, three sigle core cables laid direct in the ground (three cables in trefoil touching).

Nominal area of conductor mm²	For Value of thermal resistivity of soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.18	1.09	1.0	0.90	0.82	0.76
2.5	1.18	1.09	1.0	0.90	0.82	0.76
4	1.18	1.09	1.0	0.90	0.82	0.76
6	1.18	1.09	1.0	0.90	0.82	0.76
10	1.18	1.09	1.0	0.89	0.81	0.75
16	1.19	1.09	1.0	0.89	0.81	0.74
25	1.19	1.09	1.0	0.88	0.80	0.74
35	1.2	1.09	1.0	0.88	0.80	0.74
50	1.2	1.09	1.0	0.88	0.80	0.74
70	1.21	1.1	1.0	0.88	0.80	0.74
95	1.22	1.1	1.0	0.88	0.80	0.74
120	1.22	1.1	1.0	0.88	0.79	0.74
150	1.22	1.1	1.0	0.88	0.79	0.73
185	1.22	1.1	1.0	0.88	0.79	0.73
240	1.22	1.1	1.0	0.88	0.79	0.73
300	1.22	1.1	1.0	0.88	0.79	0.72
400	1.24	1.11	1.0	0.88	0.79	0.72
500	1.24	1.11	1.0	0.88	0.79	0.72
630	1.24	1.11	1.0	0.88	0.79	0.72

AVERCAB®
CABLE

AERIAL BUNCHED CABLES

Application: Outdoor distribution in Rural or residential areas Offers cost effective safer and reliable cable for reticulation.

Range: LT XLPE, AB cable or PE insulation

Standard:	**IS 14255, BS 7870-5, BS 625 HD 626,VDE 00276 P 626, IEC 60502 NF C 33-209**
Voltage:	600/1000V
Conductor:	Hard Drawn Aluminium, alluminium alloy or copper

Insulation: Specially formulated for exposure to sunlight and outdoor application. LT XLPE or PE is loaded with carbon black MV cable insulated and screened cores are PVC sheathed

Max Operating Temp: XLPE: Max 90°C

PVC or PE: Max 70°C

Construction: Insulated cores may be bundled together or laid up around high tensile insulated or bare messenger. If a messenger is provided; as the tension is taken by it, phase conductors can operate at maximum allowable conductor temperature.

Minimum Bending Radius: For LV 10 times & MV 15 times cable diameter

Solar Radiation: 1000 W/ sq m

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Cables Constructions

LV Cables

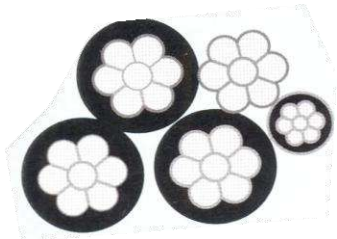
Conductor		Electrical Parameters			
		Current Rating In Air @ 30°C	Maximum DC Resistance @ 20°C	Reactance	Approx Breaking Load
Area (Sq. mm)	Strands	Amp	ohm/km	ohm/km	KN
16	7	87	1.91	0.091	2.84
25	7	107	1.20	0.087	4.17
35	7	132	0.868	0.085	5.78
50	7	165	0.641	0.083	8.45
70	19	205	0.443	0.0789	11.32
95	19	250	0.32	0.075	15.30
120	19	290	0.253	0.073	20.00
150	19	330	0206	0.072	25.00

Current Rating for max cond temp 80°C wind velocity 1Km/hr

91 Bobbin Stranding Machine

AVERCAB®
CABLE

LT AERIAL BUNCH CABLES



Cross Sectional view
Aerial Bunch Cables

1.1 KV Grade, are used for distributing power to individual consumers by utility service providers such as electricity boards and electricity distributing authorities. The cables are suspended overhead using electrical poles. The cables can be tapped intermittently from any required position, enabling them to be used un urban as well as rural areas.

Configuration

Single Phase or Three Phase systems with or without Street Light line.

Conductor

Phase or lighting conductor: Electrical grade Aluminium of H2 or H4 grade as per IS : 8130
Messenger conductor: Aluminium Silica and Magnesium Alloy.

Insulation

XLPE Compound/ PE compound

Identification of Phase

Ridges provided on the insulation of Phase Conductors: 1 ridge for the 1st phase, 2 ridges for the 2nd phase and 3 ridges for the 3rd phase. The neutral phase may have 4 ridges if required.

Colour of Insulation

As the cable remains exposed to environmental elements such as UV rays from sunlight, the insulation is mixed with a small amount of carbon black to prevent the deterioration of polythene.

Construction of Cable

The phase conductor can be of single phase or three phases. A lighting conductor can be also incorporated for street lighting. A messenger conductor supports the weight of the cable and keeps the assembly strung under tension. Phase conductors are made of concentrically stranded Aluminium Wires having 7 or 19 wires. Messenger conductors are made of a specially treated Silica, Magnesium and Aluminium Alloy having 7 or 19 wires. Phase and lighting conductors may be insulated with XLPE compound. Messenger conductors are kept either bare or insulated. Phase and lighting conductors are sometimes twisted around the messenger conductor. In special cases a neutral conductor may also be provided separately. Generally, the messenger acts as earth and neutral.

This Construction has additional advantages

Cables are lighter in weight
Easy to Install
Can be installed on poles, on walls etc.
Easy to make terminations and branch off joint on live wire as well
protection against power theft.

AVERCAB®
CABLE

Twisting and Laying

The phase conductor are being allowed to slide freely over the messenger conductor during temerature fluctuation. It is also to be ensured that during sliding the insulation should get scratches due to rubbing effect. During expansion and contraction, the phase conductors try to move towards the ends exerting additional stress at the terminating point or at the clipping point. By special twisting process such forces are neutralised. During installtion and branching off, phases conductors can easily be loosened to crimp to the connectors without straining and damaging the phase conductor.

Avercab Aerial Bunched Cable : 1.1KV grade Stranded & Compacted Aluminium phase Conductor, and Stranded Messenger Conductor with All Aluminium Alloy, Phase Conductor is insulated with XLPE Compound, Messenger is either insulated or bare. Referred specifiaction IS:14255-1995 up to latest amendment.

Sl. No.	Description and type of Cables	Number of Wires		Thickness of XLPE Insulation		Approx overall Diameter	Approx weight of cable	Breaking Load of Messenger	Maximum D.C. Resistance Ohms/Km		AC current rating Amps.
		Phase	Messenger	Phase	Messenger						
				mm	mm	mm	Kg/Km	KN (min)	Phase	Messenger	In air at 40°C
	With insulated messenger conductor										
1	1 C x 16 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	165	7.0	1.910	1.380	72
2	3 C x 16 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	301	7.0	1.910	1.380	64
3	1 C x 25 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	195	7.0	1.200	1.380	99
4	3 C x 25 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	390	7.0	1.200	1.380	84
5	1 C x 35 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	227	7.0	0.868	1.380	120
6	3 C x 35 mm² + 25 mm² (insulated)	7	7	1.20	1.20	1.20	486	7.0	0.868	1.380	105
7	1 C x 35 mm² + 35 mm² (insulated)	7	7	1.20	1.20	1.20	259	10.1	0.868	0.986	120
8	3 C x 35 mm² + 35 mm² (insulated)	7	7	1.20	1.20	1.20	518	10.1	0.868	0.986	105
9	1 C x 50 mm² + 35 mm² (insulated)	7	7	1.50	1.20	1.20	317	10.1	0.641	0.986	150
10	3 C x 50 mm² + 35 mm² (insulated)	7	7	1.50	1.20	1.20	692	10.1	0.641	0.986	130
11	3 C x 70 mm² + 50 mm² (insulated)	19	7	1.50	1.50	1.50	939	14.0	0.443	0.689	155
12	3 C x 70 mm² + 70 mm² (insulated)	19	7	1.50	1.50	1.50	1002	19.7	0.443	0.492	155
13	3 C x 95 mm² + 70 mm² (insulated)	19	7	1.50	1.50	1.50	1237	19.7	0.320	0.492	190
14	3 C x 120 mm² + 70 mm² (insulated)	19	7	1.60	1.50	1.50	1482	19.7	0.253	0.492	220
15	3 C x 150 mm² + 70 mm² (insulated)	19	7	1.80	1.50	1.50	1791	19.7	0.206	0.492	250
	With bare messenger conductor										
1	1 C x 16 mm² + 25 mm² (bare)	7	7	1.20	N.A.	18.5	137	7.0	1.910	1.380	72
2	3 C x 16 mm² + 25 mm² (bare)	7	7	1.20	-do-	19.3	272	7.0	1.910	1.380	64
3	1 C x 25 mm² + 25 mm² (bare)	7	7	1.20	-do-	19.5	167	7.0	1.200	1.380	99
4	3 C x 25 mm² + 25 mm² (bare)	7	7	1.20	-do-	20.5	362	7.0	1.200	1.380	84
5	1 C x 35 mm² + 25 mm² (bare)	7	7	1.20	-do-	22.0	199	7.0	0.868	1.380	120
6	3 C x 35 mm² + 25 mm² (bare)	7	7	1.20	-do-	23.5	458	7.0	0.868	1.380	105
7	1 C x 35 mm² + 35 mm² (bare)	7	7	1.20	-do-	24.6	226	10.1	0.868	0.986	120
8	3 C x 35 mm² + 35 mm² (bare)	7	7	1.20	-do-	25.0	485	10.1	0.868	0.986	105
9	1 C x 50 mm² + 35 mm² (bare)	7	7	1.50	-do-	26.6	284	10.1	0.641	0.986	150
10	3 C x 50 mm² + 35 mm² (bare)	7	7	1.50	-do-	26.8	659	10.1	0.641	0.986	130
11	3 C x 70 mm² + 50 mm² (bare)	19	7	1.50	-do-	31.2	890	14.0	0.443	0.689	155
12	3 C x 70 mm² + 70 mm² (bare)	19	7	1.50	-do-	34.4	946	19.7	0.443	0.492	155
13	3 C x 95 mm² + 70 mm² (bare)	19	7	1.50	-do-	36.0	1179	19.7	0.320	0.492	190
14	3 C x 120 mm² + 70 mm² (bare)	19	7	1.60	-do-	38.0	1425	19.7	0.253	0.492	220
15	3 C x 150 mm² + 70 mm² (bare)	19	7	1.80	-do-	40.0	1735	19.7	0.206	0.492	250

AVERCAB®
CABLE

Avercab Aerial Bunched Cable : 1.1KV grade Stranded & Compacted Aluminium phase Conductor, and Stranded Messenger Conductor with All Aluminium Alloy, Phase Conductor is insulated with XLPE Compound, Messenger is either insulated or bare with lighting Conductor of 16mm². Referred specifiaction IS:14255-1995 upto the latest amendment.

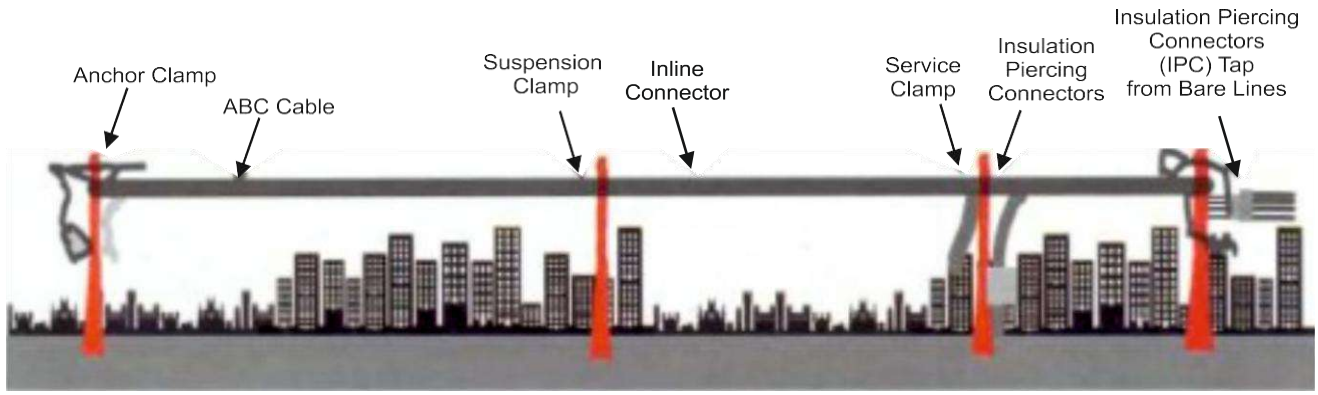
Sl. No.	Description and type of Cables	Number of Wires		Thickness of XLPE Insulation		Approx overall Diameter	Approx weight of cable	Breaking Load of Messenger			AC current rating Amps.
		Phase	Messenger	Phase	Messenger				Phase	Messenger	
				mm	mm	mm	Kg/Km	KN (min)			In air at 40°C
	With insulated messenger conductor										
1	3 C x 16 mm² + 25 mm² (insulated) + 16 mm²	7	7	1.20	1.20	23.5	369	7.0	1.910	1.380	62
2	3 C x 25 mm² + 25 mm² (insulated) + 16 mm²	7	7	1.20	1.20	25.0	457	7.0	1.200	1.380	82
3	3 C x 35 mm² + 25 mm² (insulated) + 16 mm²	7	7	1.20	1.20	27.5	554	7.0	0.868	1.380	103
4	3 C x 35 mm² + 35 mm² (insulated) + 16 mm²	7	7	1.20	1.20	28.4	586	10.1	0.868	0.986	103
5	3 C x 50 mm² + 35 mm² (insulated) + 16 mm²	7	7	1.50	1.20	32.5	760	10.1	0.641	0.986	127
6	3 C x 70 mm² + 50 mm² (insulated) + 16 mm²	19	7	1.50	1.50	37.5	1007	14.0	0.443	0.689	154
7	3 C x 70 mm² + 70 mm² (insulated) + 16 mm²	19	7	1.50	1.50	39.5	1070	19.7	0.443	0.492	154
8	3 C x 95 mm² + 70 mm² (insulated) + 16 mm²	19	7	1.50	1.50	42.5	1304	19.7	0.320	0.492	188
9	3 C x 120 mm² + 70 mm² (insulated) + 16 mm²	19	7	1.60	1.50	46.8	1550	19.7	0.253	0.492	218
10	3 C x 150 mm² + 70 mm² (insulated) + 16 mm²	19	7	1.80	1.50	50.8	1860	19.7	0.206	0.492	248
	With bare messenger conductor										
1	3 C x 16 mm² + 25 mm² (bare) + 16 mm²	7	7	1.20	N.A.	19.5	340	7.0	1.910	1.380	62
2	3 C x 25 mm² + 25 mm² (bare) + 16 mm²	7	7	1.20	-do-	20.5	429	7.0	1.200	1.380	82
3	3 C x 35 mm² + 25 mm² (bare) + 16 mm²	7	7	1.20	-do-	23.5	526	7.0	0.868	1.380	103
4	3 C x 35 mm² + 35 mm² (bare) + 16 mm²	7	7	1.20	-do-	25.0	553	10.1	0.868	0.986	103
5	3 C x 50 mm² + 35 mm² (bare) + 16 mm²	7	7	1.50	-do-	26.8	727	10.1	0.641	0.986	127
6	3 C x 70 mm² + 50 mm² (bare) + 16 mm²	19	7	1.50	-do-	31.5	958	14.0	0.443	0.689	154
7	3 C x 70 mm² + 70 mm² (bare) + 16 mm²	19	7	1.50	-do-	34.5	1013	19.7	0.443	0.492	154
8	3 C x 95 mm² + 70 mm² (bare) + 16 mm²	19	7	1.50	-do-	37.0	1248	19.7	0.320	0.492	188
9	3 C x 120 mm² + 70 mm² (bare) + 16 mm²	19	7	1.60	-do-	39.0	1493	19.7	0.253	0.492	218
10	3 C x 150 mm² + 70 mm² (bare) + 16 mm²	19	7	1.80	-do-	40.0	1803	19.7	0.206	0.492	248

Note : Insulation thickness of 16 mm² for lighting conductor 1.20 mm
Current rating of 16mm² lighting conductor 62 Amps.
Conductor operating temperature 90°C
Short circuit temperature for one sec. 250°C

Ambient Air temperature is 40°C

Rating factor for variation in air temperature :

Air Temperature °C	20	25	30	35	40	45	50
Rating Factor	1.32	1.25	1.16	1.09	1.00	0.90	0.81



Typical LT Aerial Bunch Cable Network

AVERCAB®
CABLE

CABLES FOR INSTRUMENTATION

Avercab manufacturers a wide variety of cables suitable for process instrumentation, which plays a vital role in measurement, supervision and control of the process. Introduction of microprocessor based / computerized instrumentation has demanded stringent quality requirements along with special electrical parameters for instrumentation cables.

The cables used for instrumentation are designed and manufactured very meticulously. KEI maintains high quality standards and follow & stringent in-process quality control during manufacturing of instrumentation cables, meeting the design parameters of the customer

Conductor	0.5 Sq. mm to 2.5 Sq mm of solid/stranded Tinned/Bare copper conductors.
Insulation	PVC/Polyethylene/XLPE/LSOH as per requirement.
Elements / Core:	Pair/Triad/Quad, colour coded / number printed.
Screening	Aluminium Polyester screen over all (collective) screen (OAS), individual screen (IS), or both IS & OAS with ATC drain wire. Wire braiding can also be given as per customer requirement.
Element Laying	Concentric formation or unit & group formation as per requirement.
Armouring	Unarmoured / Galvanised steel wire / Flat wire armoured.
Sheathing	PVC, FR PVC, FRLS, LSOH as per requirement.
Specification	EIL-6-52-46. Rev.05, BS: 5308 Part 1 & Part 2, BSC 143-0.75 (24/0.2 mm) OAS, IEC 60092-375, 376, BS EN 50288, VDE 0815, VG 95218, NEK 606 and customers Specifications.)

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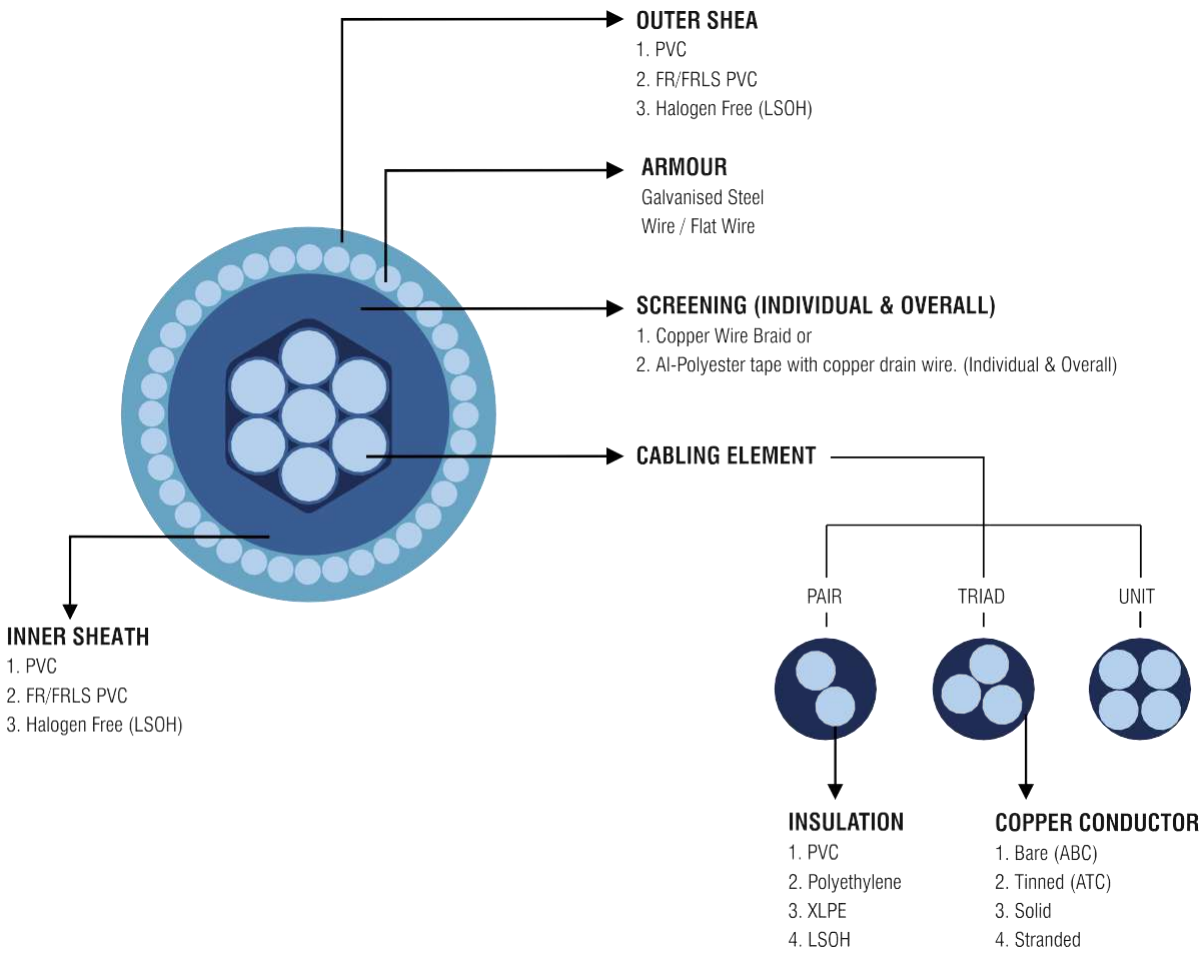
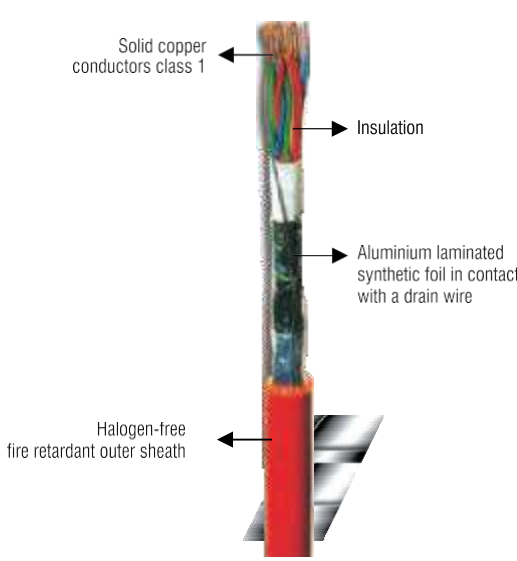
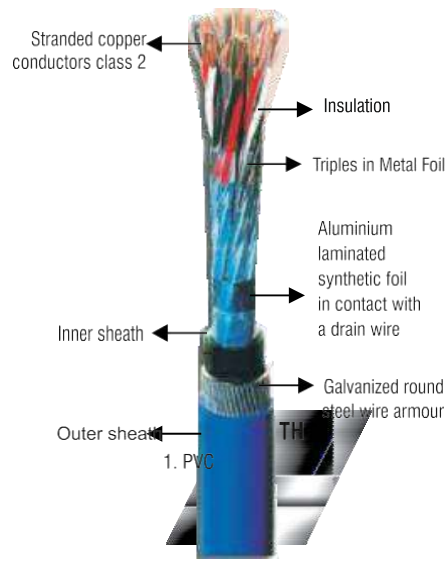
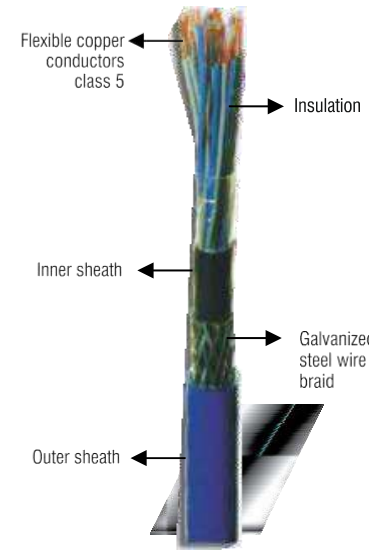
Cables Constructions



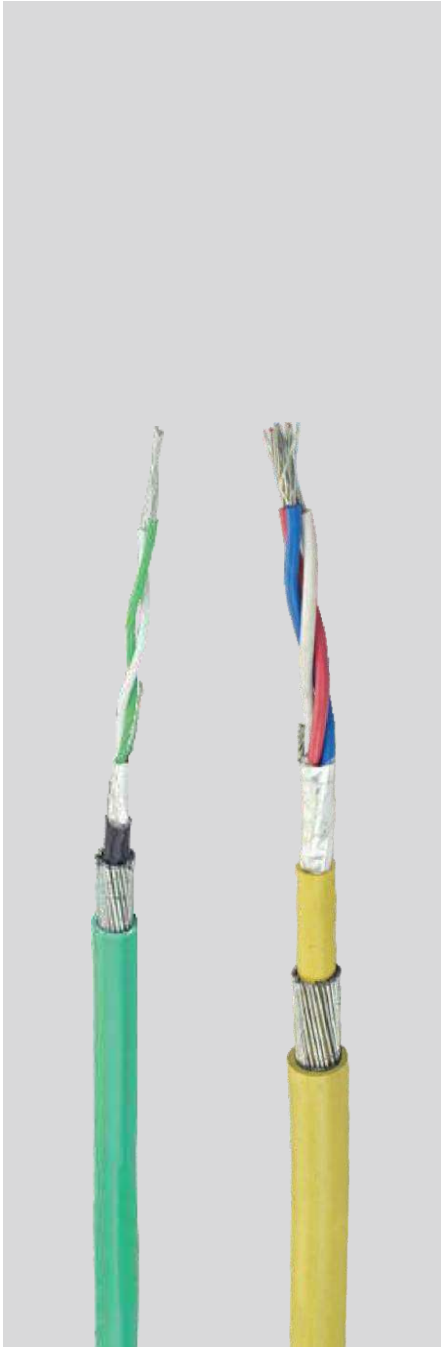






AVERCAB®
CABLE

THERMOCOUPLE EXTENSION / COMPENSATING CABLES



Thermocouple extension and compensating cables are designed for interconnercion between thermocouple probes and control instrumentation. They are generally available in the following types:

Type (1)
Unarmoured cables with conductors insulated with PVC and twisted together in pairs, sheathed overall with PVC.

Type (2)
Armoured cables with conductors insulated with PVC and twisted together in pairs, PVC bedding, Galvanised steel wire armour and sheathed overall with PVC.

All of the above types of cables can be supplied unscreened or screened (individually, collectively or both) with an Aluminium Polyster tape screen incorporating tinned copper drain wire.

The construction is similar to paired instrumentation cable but the conductor material is different. Thermocouple are used in processes to sense temperature and is connected to the pyrometers for indication and control. The thermocouple and pyrometers are electrically connected by thermocouple extension/compensating cables. The conductors used for these cables are required to have similar thermo-electric (emf) properties as that of the thermocouple used for sensing the temperature.

Range of Instrumentation Cables:

Standard	ANSI MC 96.1, BS-1843, IEC 60584-3, ENI
Conductor	Solid type as per type & mentioned in the table
Insulation	PVC/Polyethylene/XLPE/LOSH as per requirement.
Elements	Pairs colour coded/number printed.
Screen	Aluminium Polyester tape screen with Copper drain wire or alternately with Tinned Copper wire braiding. Individual element or overall screening as specified.
Armouring	Galvanised steel round wire / Flat wire.
Sheathing	PVC, FR PVC, FRLS, LSOH as per requirement.

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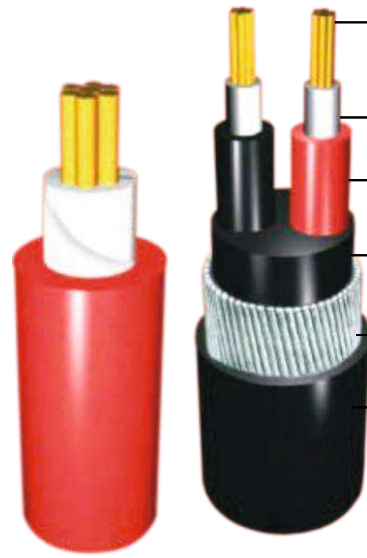
AVERCAB®
CABLE



Conductor :
Plain annealed copper stranded (class 2) conductor for ease of handling.

Tape Insulation :
Mica fire resistant tape.

Insulation:
90°C cross-linked insulation.

Bedding :
Extruded LSOH bedding compound.

Armour :
Single layer of galvanised steel wires.

Sheath :
Robut LSOH sheath, Colour Black.
Other Colours as per specification of the Customer

- 2 Core - Red Black
- 3 Core - Red Yellow Blue
- 4 Core - Black Red Yellow Blue
- 7-37 Cores Blue, Yellow and remaining core Grey each layer.
- Other Core colors available as per customerspecification

Cable Characteristics

TEMPERATURE	Range 25 to + 90°C
BENDING RADIUS	Circular conductor r=6D Shaped conductor r=8D
MECHANICAL IMPACT	Very Good
FIRE PERFORMANCE	BS 4066-1, BS 4066-3
FLEXIBILITY	Rigid
HALOGEN FREE	BS 6425-1
LOW SMOKE	Emissions BS 7622
FIRE RESISTANT	BS 6387

ISO 9001 COMPANY

**Modification which serve to improve our products will be implemented without notice.

AVERCAB®
CABLE

SAVE ELECTRICITY

QUALITY AND TESTING

At Vishnu Cables in house testing of raw materials & testing during processing at every stage is a must. There is no lapse allowed at any point where constant improvement is monitored from the beginning to the last stage

Though the construction of LT Cables appease quite simple, the manufacturing technique should be such that the cable can accept and withstand all the severe operational hazards for all the times under any circumstances.

Avercab Cables, understanding the inherent intricate operational significance of Aerial Bunch Cables, have oriented themselves to manufacture these cables for the power distribution system particularly for the varied Indian conditions.

SUPERIOR CONDUCTIVITY

FLAME RETARDANT | CRITICAL OXYGEN INDEX | QUALITY | SAFETY | FLEXIBLITY | DURABILITY

VISHNU CABLE INDUSTRIES

AN ISO 9001:2015 CERTIFIED CO.

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