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							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	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 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-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			
mm²										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 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-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								
												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	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