

Low Voltage PVC Cables

TABLE P1

Single Core PVC Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 1554 Part 1 : 1988.

Physical Data

Nominal Conductor Area	Insulation Thickness (Nominal)		Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable			
	Arm.	Un-Arm.	Wire	Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured		Unarmoured	
									kg/km	kg/km	kg/km	kg/km
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	Al	Cu	Al	Cu
4	1.3	1.0	1.4	--	1.24	1.80	11.0	8.5	150	175	85	110
6	1.3	1.0	1.4	--	1.24	1.80	11.5	9.0	170	205	100	135
10	1.3	1.0	1.4	--	1.24	1.80	12.5	10.0	200	260	120	180
16	1.3	1.0	1.4	--	1.24	1.80	13.0	11.0	135	330	145	240
25	1.5	1.2	1.4	--	1.24	1.80	15.0	12.5	295	445	200	350
35	1.5	1.2	1.4	--	1.24	1.80	16.0	13.5	345	550	240	450
50	1.7	1.4	1.4	--	1.24	1.80	17.5	15.0	415	700	305	585
70	1.7	1.4	1.4	--	1.40	1.80	19.5	17.0	530	940	385	795
95	1.9	1.6	--	4.0 x 0.8	1.40	1.80	20.0	19.0	590	1155	495	1060
120	1.9	1.6	--	4.0 x 0.8	1.40	2.00	22.0	21.0	685	1400	605	1320
150	2.1	1.8	--	4.0 x 0.8	1.40	2.00	23.5	22.5	800	1685	715	1560
185	2.3	2.0	--	4.0 x 0.8	1.40	2.00	25.5	24.5	970	2070	865	1970
240	2.5	2.2	--	4.0 x 0.8	1.40	2.00	28.5	27.5	1200	2630	1085	2520
300	2.7	2.4	--	4.0 x 0.8	1.56	2.00	31.0	30.0	1460	3275	1310	3125
400	3.0	2.6	--	4.0 x 0.8	1.56	2.20	35.0	33.5	1800	4135	1650	3985
500	3.4	3.0	--	4.0 x 0.8	1.56	2.20	38.5	37.5	2240	5225	2070	5055
630	3.9	3.4	--	4.0 x 0.8	1.72	2.40	43.5	42.0	2830	6720	2625	6515
800	3.9	3.4	--	4.0 x 0.8	1.88	2.40	49.0	47.0	3490	8450	3225	8185
1000	3.9	3.4	--	4.0 x 0.8	2.04	2.60	53.0	51.5	4220	10285	3910	10005

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 70°C.		Approximate Reactance at 50Hz.		Current Rating						Short Circuit Rating for 1sec.		Voltage Drop for Armoured Cables	
	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	Ω/km	In Ground		In Duct		In Air		kA(rms)		V/A/km	
							Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
4	7.41	4.61	9.5	5.52	0.153	0.137	31	39	30	38	27	35	0.30	0.46	19.00	11.04
6	4.61	3.08	5.91	3.69	0.147	0.131	39	49	37	48	35	44	0.46	0.69	11.82	7.39
10	3.08	1.83	3.95	2.19	0.136	0.121	51	65	51	64	47	60	0.76	1.15	7.90	4.39
16	1.91	1.15	2.45	1.38	0.125	0.111	66	85	65	83	64	82	1.22	1.84	4.91	2.77
25	1.20	0.727	1.54	0.87	0.118	0.107	86	110	84	110	84	110	1.90	2.88	3.09	1.76
35	0.868	0.524	1.11	0.627	0.111	0.101	100	130	100	125	105	130	2.66	4.03	2.23	1.27
50	0.641	0.387	0.822	0.463	0.108	0.098	120	155	115	150	130	165	3.80	5.75	1.66	0.95
70	0.443	0.268	0.568	0.321	0.100	0.090	140	190	135	175	155	205	5.32	8.05	1.15	0.67
95	0.320	0.193	0.411	0.232	0.094	0.087	175	220	155	200	190	245	7.22	10.93	0.84	0.50
120	0.253	0.153	0.325	0.184	0.090	0.085	195	250	170	220	220	280	9.12	13.80	0.67	0.41
150	0.206	0.124	0.265	0.150	0.089	0.084	220	280	190	245	250	320	11.40	17.25	0.56	0.35
185	0.164	0.0991	0.211	0.120	0.086	0.082	240	305	210	260	290	370	14.06	21.28	0.46	0.30
240	0.125	0.0754	0.162	0.0924	0.084	0.080	270	345	225	285	335	425	18.24	27.60	0.36	0.25
300	0.100	0.0601	0.130	0.0746	0.082	0.078	295	375	245	310	380	475	22.80	34.50	0.31	0.22
400	0.0778	0.0470	0.102	0.0597	0.081	0.078	325	400	275	335	435	550	30.40	46.00	0.26	0.20
500	0.0605	0.0366	0.081	0.0481	0.080	0.077	345	425	295	355	480	590	38.00	57.50	0.23	0.19
630	0.0469	0.0283	0.0648	0.0395	0.077	0.077	390	470	320	375	550	660	47.88	72.45	0.20	0.17
800	0.0367	0.0221	0.0529	0.0345	0.078	0.075	440	530	360	420	620	745	60.80	92.00	0.19	0.17
1000	0.0291	0.0176	0.0445	0.0303	0.076	0.074	490	590	400	470	700	835	76.00	115.00	0.18	0.16

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm² will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm² & above will be Compacted Circular Shaped.

Operating Conditions

Ambient Temperature	: 40°C	Depth of Laying	: 75cm
Ground Temperature	: 30°C	Thermal Resistivity of Soil	: 150°C-cm/W

TABLE P2

Two Core PVC Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 1554 Part 1 : 1988.

Physical Data

Nominal Conductor Area	Insulation Thickness (Nominal)	Inner Sheath Thickness (Minimum)	Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable			
			Wire	Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured		Unarmoured	
			mm	mm	mm	mm	mm	mm	kg/km Al	kg/km Cu	kg/km Al	kg/km Cu
2.5	0.9	0.3	1.4	--	1.24	1.80	14	12.5	--	420	--	210
4	1.0	0.3	1.4	--	1.24	1.80	16	14	455	505	175	220
6	1.0	0.3	1.4	--	1.24	1.80	17	15	510	580	205	275
10	1.0	0.3	1.4	--	1.24	1.80	19	17	605	725	250	370
16	1.0	0.3	--	4.0 x 0.8	1.40	1.80	17	16	505	695	290	480
25	1.2	0.3	--	4.0 x 0.8	1.40	2.00	20	19	660	960	420	720
35	1.2	0.3	--	4.0 x 0.8	1.40	2.00	21	20	765	1185	505	925
50	1.4	0.3	--	4.0 x 0.8	1.40	2.00	24	23	940	1510	635	1205
70	1.4	0.3	--	4.0 x 0.8	1.56	2.00	26	25	1140	1965	795	1620
95	1.6	0.4	--	4.0 x 0.8	1.56	2.20	30	29	1455	2595	1070	2210
120	1.6	0.4	--	4.0 x 0.8	1.56	2.20	32	31	1655	3100	1250	2685
150	1.8	0.4	--	4.0 x 0.8	1.72	2.40	34	33	1935	3720	1515	3305
185	2.0	0.5	--	4.0 x 0.8	1.88	2.40	38	36	2335	4560	1845	4070
240	2.2	0.5	--	4.0 x 0.8	2.04	2.60	43	41	2925	5815	2350	5240
300	2.4	0.6	--	4.0 x 0.8	2.20	2.80	46	45	3495	7160	2880	6550
400	2.6	0.7	--	4.0 x 0.8	2.36	3.20	52	51	4275	8995	3660	8380
500	3.0	0.7	--	4.0 x 0.8	2.68	3.40	58	57	5335	11365	4600	10630
630	3.4	0.7	--	4.0 x 0.8	2.84	3.80	64	64	6570	14430	5825	13680

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 70°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
	Ω/km Al	Ω/km Cu	Ω/km Al	Ω/km Cu		In Ground		In Duct		In Air		kA(rms)		V/A/km	
						Amps Al	Amps Cu	Amps Al	Amps Cu	Amps Al	Amps Cu	Al	Cu	Al	Cu
2.5	--	7.41	--	8.87	0.106	--	32	--	27	--	27	--	0.29	--	15.36
4	7.41	4.61	8.9	5.52	0.102	32	41	27	35	27	35	0.30	0.46	15.42	9.56
6	4.61	3.08	5.54	3.69	0.097	40	50	34	44	35	45	0.46	0.69	9.60	6.39
10	3.08	1.83	3.7	2.19	0.091	55	70	45	58	47	60	0.76	1.15	6.41	3.80
16	1.91	1.15	2.3	1.38	0.086	70	90	58	75	59	78	1.22	1.84	3.99	2.39
25	1.20	0.727	1.44	0.87	0.085	90	115	76	97	78	105	1.90	2.88	2.50	1.51
35	0.868	0.524	1.04	0.627	0.083	110	140	92	120	99	125	2.66	4.03	1.81	1.10
50	0.641	0.387	0.77	0.464	0.083	135	165	115	145	125	155	3.80	5.75	1.34	0.82
70	0.443	0.268	0.533	0.321	0.077	160	205	140	180	150	195	5.32	8.05	0.93	0.57
95	0.320	0.193	0.385	0.232	0.077	190	240	170	215	185	230	7.22	10.93	0.68	0.42
120	0.253	0.153	0.305	0.184	0.075	210	275	190	235	210	265	9.12	13.80	0.54	0.34
150	0.206	0.124	0.249	0.149	0.075	240	310	210	270	240	305	11.40	17.25	0.45	0.29
185	0.164	0.0991	0.198	0.121	0.074	275	350	240	300	275	350	14.06	21.28	0.37	0.25
240	0.125	0.0754	0.152	0.0929	0.074	320	405	275	345	325	410	18.24	27.60	0.29	0.21
300	0.100	0.0601	0.122	0.0753	0.074	355	430	305	385	365	465	22.80	34.50	0.25	0.18
400	0.0778	0.0470	0.096	0.0604	0.073	385	490	345	425	420	530	30.40	46.00	0.21	0.16
500	0.0605	0.0366	0.076	0.0489	0.073	437	555	391	482	476	601	38.00	57.50	0.18	0.15
630	0.0469	0.0283	0.061	0.0401	0.073	496	631	444	548	541	683	47.88	72.45	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm² will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm² & above will be Compacted & Sector Shaped.

Operating Conditions

Ambient Temperature	: 40°C	Depth of Laying	: 75cm
Ground Temperature	: 30°C	Thermal Resistivity of Soil	: 150°C-cm/W

TABLE P3

Three Core PVC Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 1554 Part 1 : 1988.

Physical Data

Nominal Conductor Area	Insulation Thickness (Nominal)	Inner Sheath Thickness (Minimum)	Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable			
			Wire	Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured		Unarmoured	
			mm	mm	mm	mm	mm	mm	kg/km Al	kg/km Cu	kg/km Al	kg/km Cu
2.5	0.9	0.3	1.4	--	1.24	1.80	15	13	--	475	--	240
4	1.0	0.3	1.4	--	1.24	1.80	16	14	505	575	210	280
6	1.0	0.3	1.4	--	1.24	1.80	18	16	580	685	250	355
10	1.0	0.3	1.4	--	1.40	1.80	20	17.5	700	885	310	490
16	1.0	0.3	--	4.0 x 0.8	1.40	1.80	20	18	650	935	390	675
25	1.2	0.3	--	4.0 x 0.8	1.40	2.00	22	21	820	1270	575	1005
35	1.2	0.3	--	4.0 x 0.8	1.40	2.00	24	23	1000	1630	690	1320
50	1.4	0.3	--	4.0 x 0.8	1.56	2.00	27	26	1245	2100	875	1730
70	1.4	0.4	--	4.0 x 0.8	1.56	2.20	30	29	1535	2775	1150	2385
95	1.6	0.4	--	4.0 x 0.8	1.56	2.20	34	33	1910	3620	1480	3190
120	1.6	0.4	--	4.0 x 0.8	1.72	2.20	37	35	2250	4415	1750	3915
150	1.8	0.5	--	4.0 x 0.8	1.88	2.40	41	39	2685	5365	2145	4825
185	2.0	0.5	--	4.0 x 0.8	1.88	2.60	44	43	3210	6545	2645	5980
240	2.2	0.6	--	4.0 x 0.8	2.20	2.80	50	49	4065	8405	3380	7720
300	2.4	0.6	--	4.0 x 0.8	2.36	3.00	56	54	4905	10405	4160	9660
400	2.6	0.7	--	4.0 x 0.8	2.52	3.40	62	61	6010	13090	5245	12325
500	3.0	0.7	--	4.0 x 0.8	2.84	3.60	70	68	7525	16570	6620	15660
630	3.4	0.7	--	4.0 x 0.8	3.00	4.00	77	77	9305	21090	6370	20155

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 70°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
	Ω/km Al	Ω/km Cu	Ω/km Al	Ω/km Cu		In Ground		In Duct		In Air		kA(rms)		V/A/km	
						Amps Al	Amps Cu	Amps Al	Amps Cu	Amps Al	Amps Cu	Al	Cu	Al	Cu
2.5	--	7.41	--	8.87	0.106	--	27	--	24	--	24	--	0.29	--	15.36
4	7.41	4.61	8.9	5.52	0.102	28	36	23	30	23	30	0.30	0.46	15.42	9.56
6	4.61	3.08	5.54	3.69	0.097	35	45	30	38	30	39	0.46	0.69	9.60	6.39
10	3.08	1.83	3.7	2.19	0.091	46	60	39	50	40	52	0.76	1.15	6.41	3.80
16	1.91	1.15	2.3	1.38	0.086	60	77	50	64	51	66	1.22	1.84	3.99	2.39
25	1.20	0.727	1.44	0.87	0.085	76	99	63	81	70	90	1.90	2.88	2.50	1.51
35	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.03	1.81	1.10
50	0.641	0.387	0.77	0.464	0.083	110	145	95	125	105	135	3.80	5.75	1.34	0.82
70	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.05	0.93	0.57
95	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	10.93	0.68	0.42
120	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.80	0.54	0.34
150	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.40	17.25	0.45	0.29
185	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.06	21.28	0.37	0.25
240	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.24	27.60	0.29	0.21
300	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.80	34.50	0.25	0.18
400	0.0778	0.0470	0.096	0.0604	0.073	335	425	290	360	375	455	30.40	46.00	0.21	0.16
500	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.00	57.50	0.18	0.15
630	0.0469	0.0283	0.061	0.0401	0.073	431	548	374	464	483	586	47.88	72.45	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm² will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm² & above will be Compacted & Sector Shaped.

Operating Conditions

Ambient Temperature	: 40°C	Depth of Laying	: 75cm
Ground Temperature	: 30°C	Thermal Resistivity of Soil	: 150°C-cm/W

TABLE P4

3½ Core PVC Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 1554 Part 1 : 1988.

Physical Data

Nominal Conductor Area		Insulation Thickness (Nominal)		Inner Sheath Thickness (Minimum)	Armour Dimension	Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable			
		Power	Neutral			Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured		Unarmoured
mm ²	mm ²	mm ²	mm ²	mm	mm	mm	mm	mm	mm	kg/km	kg/km	kg/km	kg/km
25	16	1.2	1.0	0.3	4.0 x 0.8	1.40	2.00	23.5	23.5	955	1470	685	1230
35	16	1.2	1.0	0.3	4.0 x 0.8	1.40	2.00	26.0	26.0	1115	1810	830	1560
50	25	1.4	1.2	0.3	4.0 x 0.8	1.56	2.00	29.0	29.0	1405	2360	1065	2070
70	35	1.4	1.2	0.4	4.0 x 0.8	1.56	2.20	32.0	32.0	1730	3115	1385	2830
95	50	1.6	1.4	0.4	4.0 x 0.8	1.56	2.20	36.5	36.5	2185	4100	1795	3790
120	70	1.6	1.4	0.5	4.0 x 0.8	1.72	2.40	40.0	40.0	2615	5095	2195	4775
150	70	1.8	1.4	0.5	4.0 x 0.8	1.88	2.40	44.0	44.0	3065	6035	2565	5655
185	95	2.0	1.6	0.5	4.0 x 0.8	2.04	2.60	48.5	48.5	3730	7485	3185	7095
240	120	2.2	1.6	0.6	4.0 x 0.8	2.20	3.00	55.0	55.0	4645	9515	4095	9155
300	150	2.4	1.8	0.6	4.0 x 0.8	2.36	3.20	60.5	60.5	5595	11750	5025	11415
400	185	2.6	2.0	0.7	4.0 x 0.8	2.68	3.40	68.5	68.5	6945	14840	6265	14460
500	240	3.0	2.2	0.7	4.0 x 0.8	2.84	3.80	76.5	76.5	8650	18760	7975	18465
630	300	3.4	2.4	0.7	4.0 x 0.8	3.00	4.00	86.0	86.0	10700	23835	9990	23610

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 70°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.	Voltage Drop		
	Ω/km	Ω/km	Ω/km	Ω/km		Ω/km	In Ground		In Duct		In Air				
							Amps	Amps	Amps	Amps	Amps			Amps	
mm ²	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu	
25	1.20	0.727	1.44	0.870	0.085	76	99	63	81	70	90	1.90	2.88	2.50	1.51
35	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.03	1.81	1.10
50	0.641	0.387	0.770	0.464	0.083	110	145	95	125	105	135	3.80	5.75	1.34	0.82
70	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.05	0.93	0.57
95	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	10.93	0.68	0.42
120	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.80	0.54	0.34
150	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.40	17.25	0.45	0.29
185	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.06	21.28	0.37	0.25
240	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.24	27.60	0.29	0.21
300	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.80	34.50	0.25	0.18
400	0.0778	0.0470	0.096	0.0604	0.073	335	425	290	360	375	455	30.40	46.00	0.21	0.16
500	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.00	57.50	0.18	0.15
630	0.0469	0.0283	0.061	0.0401	0.073	431	548	374	464	483	586	47.88	72.45	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- All the Conductors will be Compacted & Sector Shaped.

Operating Conditions

Ambient Temperature : 40°C
 Ground Temperature : 30°C
 Depth of Laying : 75cm
 Thermal Resistivity of Soil : 150°C-cm/W

TABLE P5

Four Core PVC Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 1554 Part 1 : 1988.

Physical Data

Nominal Conductor Area	Insulation Thickness (Nominal)	Inner Sheath Thickness (Minimum)	Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable			
			Wire	Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured		Unarmoured	
									kg/km	kg/km	kg/km	kg/km
mm ²	mm	mm	mm	mm	mm	mm	mm	mm	Al	Cu	Al	Cu
2.5	0.9	0.3	1.4	--	1.24	1.80	16.0	14.0	--	540	--	285
4	1.0	0.3	1.4	--	1.24	1.80	18.0	15.5	580	675	245	345
6	1.0	0.3	1.4	--	1.24	1.80	19.0	17.0	665	810	300	440
10	1.0	0.3	--	4.0 x 0.8	1.40	1.80	21.0	19.0	645	885	385	625
16	1.0	0.3	--	4.0 x 0.8	1.40	2.00	21.5	20.0	765	1145	500	880
25	1.2	0.3	--	4.0 x 0.8	1.40	2.00	25.0	23.5	1010	1605	700	1300
35	1.2	0.3	--	4.0 x 0.8	1.40	2.00	27.0	26.0	1225	2070	875	1720
50	1.4	0.4	--	4.0 x 0.8	1.56	2.20	31.0	30.0	1545	2685	1155	2295
70	1.4	0.4	--	4.0 x 0.8	1.56	2.20	35.0	33.5	1925	3570	1470	3120
95	1.6	0.4	--	4.0 x 0.8	1.72	2.40	39.0	38.0	2450	4730	1940	4220
120	1.6	0.5	--	4.0 x 0.8	1.88	2.40	43.0	41.5	2900	5790	2315	5200
150	1.8	0.5	--	4.0 x 0.8	1.88	2.60	47.0	45.5	3425	6995	2815	6385
185	2.0	0.6	--	4.0 x 0.8	2.04	2.80	51.0	51.0	4155	8605	3495	7940
240	2.2	0.6	--	4.0 x 0.8	2.36	3.00	59.0	57.5	5225	11010	4435	10220
300	2.4	0.7	--	4.0 x 0.8	2.52	3.40	66.0	64.5	6385	13720	5560	12890
400	2.6	0.7	--	4.0 x 0.8	2.84	3.60	73.0	72.0	7840	17280	6885	16330
500	3.0	0.7	--	4.0 x 0.8	3.00	4.00	82.0	82.0	9800	21860	8785	20840
630	3.4	0.7	--	4.0 x 0.8	3.00	4.00	92.0	91.5	12065	27780	10935	26650

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 70°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
						In Ground		In Duct		In Air					
	Ω/km	Ω/km	Ω/km	Ω/km		Ω/km	Amps	Amps	Amps	Amps	Amps	Amps	kA(rms)	kA(rms)	V/A/km
mm ²	Al	Cu	Al	Cu	Ω/km	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
2.5	--	7.41	--	8.87	0.106	--	27	--	24	--	24	--	0.29	--	15.36
4	7.41	4.61	8.9	5.52	0.102	28	36	23	30	23	30	0.30	0.46	15.42	9.56
6	4.61	3.08	5.54	3.69	0.097	35	45	30	38	30	39	0.46	0.69	9.60	6.39
10	3.08	1.83	3.7	2.19	0.091	46	60	39	50	40	52	0.76	1.15	6.41	3.80
16	1.91	1.15	2.3	1.38	0.086	60	77	50	64	51	66	1.22	1.84	3.99	2.39
25	1.20	0.727	1.44	0.87	0.085	76	99	63	81	70	90	1.90	2.88	2.50	1.51
35	0.868	0.524	1.04	0.627	0.083	92	120	77	99	86	110	2.66	4.03	1.81	1.10
50	0.641	0.387	0.77	0.464	0.083	110	145	95	125	105	135	3.80	5.75	1.34	0.82
70	0.443	0.268	0.533	0.321	0.077	135	175	115	150	130	165	5.32	8.05	0.93	0.57
95	0.320	0.193	0.385	0.232	0.077	165	210	140	175	155	200	7.22	10.93	0.68	0.42
120	0.253	0.153	0.305	0.184	0.075	185	240	155	195	180	230	9.12	13.80	0.54	0.34
150	0.206	0.124	0.249	0.149	0.075	210	270	175	225	205	265	11.40	17.25	0.45	0.29
185	0.164	0.0991	0.198	0.121	0.074	235	300	200	255	240	305	14.06	21.28	0.37	0.25
240	0.125	0.0754	0.152	0.0929	0.074	275	345	235	295	280	355	18.24	27.60	0.29	0.21
300	0.100	0.0601	0.122	0.0753	0.074	305	385	260	335	315	400	22.80	34.50	0.25	0.18
400	0.0778	0.0470	0.096	0.0604	0.073	335	425	290	360	375	455	30.40	46.00	0.21	0.16
500	0.0605	0.0366	0.076	0.0489	0.073	380	482	329	408	425	516	38.00	57.50	0.18	0.15
630	0.0469	0.0283	0.061	0.0401	0.073	431	548	374	464	483	586	47.88	72.45	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm² will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm² & above will be Compacted & Sector Shaped.

Operating Conditions

Ambient Temperature	: 40°C	Depth of Laying	: 75cm
Ground Temperature	: 30°C	Thermal Resistivity of Soil	: 150°C-cm/W

TABLE P6

PVC Insulated Armoured & Unarmoured Control Cable with Copper Conductor of 1.5 mm² Confirming to IS : 1554 Part 1 : 1988.

Physical Data

No. of Cores x Nominal Conductor Area	Insulation Thickness (Nominal)	Inner Sheath Thickness (Minimum)	Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable	
			Wire	Strip	Arm.	Un-Arm.	Arm.	Un-Arm.	Armoured	Unarmoured
No x mm ²	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
2 x 1.5	0.8	0.3	1.4	--	1.24	1.80	13.0	11.0	360	140
3 x 1.5	0.8	0.3	1.4	--	1.24	1.80	13.5	11.5	400	170
4 x 1.5	0.8	0.3	1.4	--	1.24	1.80	14.5	12.5	445	200
5 x 1.5	0.8	0.3	1.4	--	1.24	1.80	15.5	13.5	500	235
6 x 1.5	0.8	0.3	1.4	--	1.24	1.80	16.5	14.5	555	265
7 x 1.5	0.8	0.3	1.4	--	1.24	1.80	16.5	14.5	580	290
10 x 1.5	0.8	0.3	1.4	--	1.40	1.80	20.0	18.0	780	395
12 x 1.5	0.8	0.3	--	4.0 x 0.8	1.24	1.80	19.5	18.5	680	445
14 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	1.80	20.5	19.0	750	500
16 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	1.80	21.5	20.0	830	555
19 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	2.00	22.5	21.5	930	650
24 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	2.00	26.0	24.5	1120	805
27 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	2.00	26.5	25.0	1195	880
30 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	2.00	27.0	26.0	1295	955
37 x 1.5	0.8	0.3	--	4.0 x 0.8	1.40	2.00	29.0	28.0	1495	1135
44 x 1.5	0.8	0.3	--	4.0 x 0.8	1.56	2.00	33.0	31.5	1760	1335
52 x 1.5	0.8	0.4	--	4.0 x 0.8	1.56	2.20	34.0	33.5	2020	1580
61 x 1.5	0.8	0.4	--	4.0 x 0.8	1.56	2.20	36.0	35.5	2270	1810

Electrical Data

No. of Cores x Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.	Approximate AC Resistance at Max. Operating Temperature 70°C.	Approximate Reactance at 50Hz.	Current Rating			Short Circuit Rating for 1sec.	Voltage Drop
				In Ground	In Duct	In Air		
No x mm ²	Ω/km	Ω/km	Ω/km	Amps	Amps	Amps	kA(rms)	V/A/km
2 x 1.5	12.1	14.5	0.110	23	20	20	0.17	25.12
3 x 1.5	12.1	14.5	0.110	21	17	17	0.17	25.12
4 x 1.5	12.1	14.5	0.110	21	17	17	0.17	25.12
5 x 1.5	12.1	14.5	0.110	21	17	17	0.17	25.12
6 x 1.5	12.1	14.5	0.110	15	13	13	0.17	25.12
7 x 1.5	12.1	14.5	0.110	14	13	13	0.17	25.12
10 x 1.5	12.1	14.5	0.110	13	11	11	0.17	25.12
12 x 1.5	12.1	14.5	0.110	12	10	10	0.17	25.12
14 x 1.5	12.1	14.5	0.110	11	10	10	0.17	25.12
16 x 1.5	12.1	14.5	0.110	11	9	9	0.17	25.12
19 x 1.5	12.1	14.5	0.110	10	9	9	0.17	25.12
24 x 1.5	12.1	14.5	0.110	9	8	8	0.17	25.12
27 x 1.5	12.1	14.5	0.110	9	8	8	0.17	25.12
30 x 1.5	12.1	14.5	0.110	9	7	7	0.17	25.12
37 x 1.5	12.1	14.5	0.110	8	7	7	0.17	25.12
44 x 1.5	12.1	14.5	0.110	7	6	6	0.17	25.12
52 x 1.5	12.1	14.5	0.110	7	6	6	0.17	25.12
61 x 1.5	12.1	14.5	0.110	6	6	6	0.17	25.12

- The above data is indicative & may be changed without any prior information.
- Conductors can be Solid or Stranded.

Operating Conditions

Ambient Temperature : 40°C Depth of Laying : 75cm
 Ground Temperature : 30°C Thermal Resistivity of Soil : 150°C-cm/W

TABLE P7

PVC Insulated Armoured & Unarmoured Control Cable with Copper Conductor of 2.5 mm² Confirming to IS : 1554 Part 1 : 1988.

Physical Data

No. of Cores x Nominal Conductor Area	Insulation Thickness (Nominal) mm	Inner Sheath Thickness (Minimum) mm	Armour Dimension		Outer Sheath Thickness		Approximate Overall Diameter		Approximate Net Weight of the Cable	
			Wire mm	Strip mm	Arm. mm	Un-Arm. mm	Arm. mm	Un-Arm. mm	Armoured kg/km	Unarmoured kg/km
2 x 2.5	0.9	0.3	1.4	--	1.24	1.80	14.0	12.5	420	210
3 x 2.5	0.9	0.3	1.4	--	1.24	1.80	15.0	13.0	475	240
4 x 2.5	0.9	0.3	1.4	--	1.24	1.80	16.0	14.0	540	285
5 x 2.5	0.9	0.3	1.4	--	1.24	1.80	17.0	15.0	625	335
6 x 2.5	0.9	0.3	1.4	--	1.24	1.80	18.0	16.0	690	380
7 x 2.5	0.9	0.3	1.4	--	1.24	1.80	18.0	16.0	725	410
10 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	1.80	22.0	20.0	825	570
12 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	22.0	21.0	895	660
14 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	23.0	22.0	1000	745
16 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	24.0	23.0	1105	825
19 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	26.0	24.5	1240	940
24 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	30.0	28.0	1500	1170
27 x 2.5	0.9	0.3	--	4.0 x 0.8	1.40	2.00	30.0	29.0	1635	1275
30 x 2.5	0.9	0.3	--	4.0 x 0.8	1.56	2.00	32.0	30.0	1795	1390
37 x 2.5	0.9	0.4	--	4.0 x 0.8	1.56	2.20	34.0	32.5	2100	1705
44 x 2.5	0.9	0.4	--	4.0 x 0.8	1.56	2.20	38.0	36.5	2455	2010
52 x 2.5	0.9	0.4	--	4.0 x 0.8	1.56	2.20	40.0	38.0	2770	2300
61 x 2.5	0.9	0.4	--	4.0 x 0.8	1.56	2.20	42.0	40.5	3150	2640

Electrical Data

No. of Cores x Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C. Ω/km	Approximate AC Resistance at Max. Operating Temperature 70°C. Ω/km	Approximate Reactance at 50Hz. Ω/km	Current Rating			Short Circuit Rating for 1sec. kA(rms)	Voltage Drop V/A/km
				In Ground Amps	In Duct Amps	In Air Amps		
2 x 2.5	7.41	8.87	0.106	32	27	27	0.29	15.36
3 x 2.5	7.41	8.87	0.106	27	24	24	0.29	15.36
4 x 2.5	7.41	8.87	0.106	27	24	24	0.29	15.36
5 x 2.5	7.41	8.87	0.106	27	24	24	0.29	15.36
6 x 2.5	7.41	8.87	0.106	21	18	18	0.29	15.36
7 x 2.5	7.41	8.87	0.106	20	17	17	0.29	15.36
10 x 2.5	7.41	8.87	0.106	18	15	15	0.29	15.36
12 x 2.5	7.41	8.87	0.106	17	14	14	0.29	15.36
14 x 2.5	7.41	8.87	0.106	16	13	13	0.29	15.36
16 x 2.5	7.41	8.87	0.106	15	12	12	0.29	15.36
19 x 2.5	7.41	8.87	0.106	14	12	12	0.29	15.36
24 x 2.5	7.41	8.87	0.106	13	11	11	0.29	15.36
27 x 2.5	7.41	8.87	0.106	12	10	10	0.29	15.36
30 x 2.5	7.41	8.87	0.106	12	10	10	0.29	15.36
37 x 2.5	7.41	8.87	0.106	11	9	9	0.29	15.36
44 x 2.5	7.41	8.87	0.106	10	9	9	0.29	15.36
52 x 2.5	7.41	8.87	0.106	10	8	8	0.29	15.36
61 x 2.5	7.41	8.87	0.106	9	8	8	0.29	15.36

- The above data is indicative & may be changed without any prior information.
- Conductors can be Solid or Stranded.

Operating Conditions

Ambient Temperature : 40°C Depth of Laying : 75cm
 Ground Temperature : 30°C Thermal Resistivity of Soil : 150°C-cm/W

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TABLE P8 : Group Rating Factors for Circuits for Three Single Core Cables in Trefoil and Touching Horizontal Formation Laid Direct in Ground :

No. of Circuits	Spacing (Between Centers of Circuits)				
	Touching	15 cm	30 cm	45 cm	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 P9 : Rating Factors for Groups of Twin and Multicore Cables Laid Direct in Ground in Tier Formation :

No. of Circuits	Spacing (Between Centers of Circuits)				
	Touching	15 cm	30 cm	45 cm	60 cm
4	0.60	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 P10 : Rating Factors for Variation in Thermal Resistivity of Soil (Multicore Cables Laid Direct in the Ground) :

Nominal Area of Conductor mm ²	For Values of Thermal Resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.10	1.05	1.00	0.92	0.86	0.81
2.5	1.10	1.05	1.00	0.92	0.86	0.81
4	1.10	1.05	1.00	0.92	0.86	0.81
6	1.10	1.05	1.00	0.92	0.86	0.81
10	1.10	1.06	1.00	0.92	0.85	0.80
16	1.12	1.06	1.00	0.91	0.84	0.79
25	1.14	1.08	1.00	0.91	0.84	0.78
35	1.15	1.08	1.00	0.91	0.84	0.77
50	1.15	1.08	1.00	0.91	0.84	0.77
70	1.15	1.08	1.00	0.90	0.83	0.76
95	1.15	1.08	1.00	0.90	0.83	0.76
120	1.17	1.09	1.00	0.90	0.82	0.76
150	1.17	1.09	1.00	0.90	0.82	0.76
185	1.18	1.09	1.00	0.89	0.81	0.75
240	1.18	1.09	1.00	0.89	0.81	0.75
300	1.18	1.09	1.00	0.89	0.81	0.75
400	1.19	1.10	1.00	0.89	0.81	0.75
500	1.21	1.10	1.00	0.88	0.80	0.74
630	1.22	1.10	1.00	0.88	0.80	0.74

TABLE P11 : Rating Factors for Variation in Thermal Resistivity of Soil, Three Single Core Cables Laid Direct in the Ground (Three Cables in Trefoil Touching) :

Nominal Area of Conductor mm ²	For Values of Thermal Resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.18	1.09	1.00	0.90	0.82	0.76
2.5	1.18	1.09	1.00	0.90	0.82	0.76
4	1.18	1.09	1.00	0.90	0.82	0.76
6	1.18	1.09	1.00	0.90	0.82	0.76
10	1.18	1.09	1.00	0.89	0.81	0.75
16	1.19	1.09	1.00	0.89	0.81	0.74
25	1.19	1.09	1.00	0.88	0.80	0.74
35	1.20	1.09	1.00	0.88	0.80	0.74
50	1.20	1.09	1.00	0.88	0.80	0.74
70	1.21	1.10	1.00	0.88	0.80	0.74
95	1.22	1.10	1.00	0.88	0.80	0.74
120	1.22	1.10	1.00	0.88	0.79	0.74
150	1.22	1.10	1.00	0.88	0.79	0.73
185	1.22	1.10	1.00	0.88	0.79	0.73
240	1.22	1.10	1.00	0.88	0.79	0.73
300	1.22	1.10	1.00	0.88	0.79	0.72
400	1.24	1.11	1.00	0.88	0.79	0.72
500	1.24	1.11	1.00	0.88	0.79	0.72
630	1.24	1.11	1.00	0.88	0.79	0.72

TABLE P12 : Rating Factor for Variation in Depth of Laying Direct in Ground :

Depth of Laying (cm)	75	90	105	120	150	180 & above
Up-to 25mm ²	1.00	0.99	0.98	0.97	0.96	0.95
Above 25mm ² & up-to 300mm ²	1.00	0.98	0.97	0.96	0.94	0.93
Above 300mm ²	1.00	0.97	0.96	0.95	0.92	0.91

TABLE P13 : Rating Factors for Variation in Ambient Air Temperature :

Air Temperature (°C)	15	20	25	30	35	40	45	50	55
Rating Factor	1.40	1.32	1.25	1.16	1.09	1.00	0.90	0.80	0.68

PVC HR - 85 in Air

Air Temperature (°C)	15	20	25	30	35	40	45	50	55
Rating Factor	1.25	1.20	1.15	1.11	1.05	1.00	0.94	0.88	0.82

TABLE P14 : Rating Factors for Variation in Ground Temperature :

Ground Temperature (°C)	15	20	25	30	35	40	45	50	55
Rating Factor	1.17	1.12	1.06	1.00	0.94	0.87	0.79	0.71	0.61

PVC HR - 85 in Ground

Ground Temperature (°C)	15	20	25	30	35	40	45	50	55
Rating Factor	1.13	1.09	1.04	1.0	0.95	0.9	0.85	0.8	0.74

TABLE P15 : Rating Factors for Multi-core Cables Laid on Open Racks in Air :

Cables Laid on The Cable Trays Exposed to Air & The Cables Spaced by One Cable Diameter & The Trays are 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	0.90	0.89
3	0.94	0.92	0.89	0.88
6	0.93	0.90	0.87	0.86

TABLE P16 : Rating Factors for Multi-Core Cables Laid on Open Racks in Air :

Cables Laid on The Cable Trays Exposed to Air & The Cables are Touching & The Trays are 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	0.80	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 P17 : Rating Factors for Single Core Cable in Trefoil Circuits Laid on Open Racks in Air :

Cables Laid on The Cable Trays Exposed to Air & The Trefoil Group Spaced by Two Cable Diameter & The Trays are in Tiers 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 P18 : Rating Factors for Groups of Twin and Multicore Cables Laid Direct in Ground in Horizontal Formation :

No. of Cables	Rating Factor for axial Spacing				
	Touching	15 cm	30 cm	45 cm	60 cm
2	0.79	0.82	0.87	0.90	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	0.50	0.57	0.66	0.72	0.76

TABLE P19 : Rating Factors for Circuits of Two Single Core Cables, Side by Side & Touching, Horizontal Formation, Laid Direct in Ground :

No. of Circuits	Spacing (Between Centers of Circuits)				
	Touching	15 cm	30 cm	45 cm	60 cm
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