

**TABLE X1**

**Single Core XLPE Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 7098 Part 1 : 1988.**

**Physical Data**

Nominal Conductor Area mm <sup>2</sup>	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	
	mm	mm	mm	mm	mm	mm	mm	mm	kg/km Al	kg/km Cu	kg/km Al	kg/km Cu
1.5	1.0	0.7	--	--	--	1.80	--	7.0	--	--	--	65
2.5	1.0	0.7	--	--	--	1.80	--	7.5	--	--	--	80
4	1.0	0.7	1.4	--	1.24	1.80	10.0	8.0	130	155	75	100
6	1.0	0.7	1.4	--	1.24	1.80	11.0	9.0	145	180	90	120
10	1.0	0.7	1.4	--	1.24	1.80	11.5	9.5	170	230	105	165
16	1.0	0.7	1.4	--	1.24	1.80	12.5	10.5	200	295	130	225
25	1.2	0.9	1.4	--	1.24	1.80	14.0	12.0	260	410	180	325
35	1.2	0.9	1.4	--	1.24	1.80	15.0	13.0	305	515	215	425
50	1.3	1.0	1.4	--	1.24	1.80	16.5	14.5	365	650	265	550
70	1.4	1.1	1.4	--	1.24	1.80	18.5	16.5	460	870	350	760
95	1.4	1.1	--	4.0 x 0.8	1.40	1.80	19.5	18.0	515	1080	440	1005
120	1.5	1.2	--	4.0 x 0.8	1.40	1.80	21.5	19.5	610	1330	530	1245
150	1.7	1.4	--	4.0 x 0.8	1.40	2.00	23.0	21.5	715	1605	650	1535
185	1.9	1.6	--	4.0 x 0.8	1.40	2.00	25.0	24.0	865	1965	790	1890
240	2.0	1.7	--	4.0 x 0.8	1.40	2.00	28.0	26.5	1070	2505	985	2415
300	2.1	1.8	--	4.0 x 0.8	1.56	2.00	30.0	28.5	1300	3115	1180	2995
400	2.4	2.0	--	4.0 x 0.8	1.56	2.20	34.0	32.5	1610	3945	1495	3835
500	2.6	2.2	--	4.0 x 0.8	1.56	2.20	37.5	36.0	1980	4970	1860	4845
630	2.8	2.4	--	4.0 x 0.8	1.72	2.20	41.5	40.0	2475	6360	2305	6195
800	3.1	2.6	--	4.0 x 0.8	1.72	2.40	47.0	45.5	3095	8055	2930	7890
1000	3.3	2.8	--	4.0 x 0.8	1.88	2.60	52.0	50.5	3820	9885	3645	9710

**Electrical Data**

Nominal Conductor Area mm <sup>2</sup>	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 90°C.		Approximate Reactance at 50Hz.		Current Rating						Short Circuit Rating for 1sec.	Voltage Drop for Armoured Cables		
	/km Al	/km Cu	/km Al	/km Cu	Arm. /km	Un-Arm. /km	In Ground		In Duct		In Air			kA(rms)	V/A/km	
	Al	Cu	Al	Cu	Al	Cu	Amps Al	Amps Cu	Amps Al	Amps Cu	Amps Al	Amps Cu	Al		Cu	Al
1.5	--	12.1	--	15.43	--	0.158	--	28	--	26	--	24	--	0.21	--	--
2.5	--	7.41	--	9.45	--	0.146	--	36	--	33	--	31	--	0.36	--	--
4	7.41	4.61	9.50	5.88	0.152	0.136	37	47	34	43	33	41	0.38	0.57	19.01	11.76
6	4.61	3.08	5.91	3.93	0.143	0.127	47	58	43	53	43	52	0.56	0.86	11.83	7.86
10	3.08	1.83	3.95	2.33	0.132	0.118	59	77	54	70	55	71	0.94	1.43	7.90	4.67
16	1.91	1.15	2.45	1.47	0.125	0.112	76	98	69	89	72	94	1.50	2.29	4.90	2.94
25	1.20	0.727	1.54	0.927	0.119	0.107	98	126	89	114	98	126	2.35	3.58	3.09	1.87
35	0.868	0.524	1.113	0.668	0.114	0.102	116	150	106	136	119	154	3.29	5.01	2.24	1.36
50	0.641	0.387	0.822	0.494	0.109	0.100	137	177	124	160	145	187	4.70	7.15	1.66	1.01
70	0.443	0.268	0.568	0.342	0.101	0.092	168	216	151	195	185	238	6.58	10.01	1.15	0.71
95	0.320	0.193	0.411	0.247	0.096	0.089	202	260	181	233	235	303	8.93	13.59	0.84	0.53
120	0.253	0.153	0.325	0.196	0.093	0.087	230	295	206	264	276	354	11.28	17.16	0.68	0.43
150	0.206	0.124	0.265	0.159	0.092	0.088	256	329	229	294	314	403	14.10	21.45	0.56	0.37
185	0.164	0.0991	0.211	0.1281	0.089	0.085	290	371	258	330	366	468	17.39	26.46	0.46	0.31
240	0.125	0.0754	0.162	0.0986	0.087	0.083	335	427	298	379	434	553	22.56	34.32	0.37	0.26
300	0.100	0.0601	0.130	0.0797	0.085	0.081	376	477	333	422	500	634	28.20	42.90	0.31	0.23
400	0.0778	0.0470	0.1023	0.0639	0.083	0.080	429	537	378	473	589	737	37.60	57.20	0.26	0.21
500	0.0605	0.0366	0.0809	0.0518	0.082	0.079	485	598	426	525	685	844	47.00	71.50	0.23	0.19
630	0.0469	0.0283	0.0644	0.0424	0.080	0.077	546	661	477	578	793	961	59.22	90.09	0.21	0.18
800	0.0367	0.0221	0.0524	0.0358	0.079	0.077	608	721	528	626	907	1077	75.20	114.40	0.19	0.17
1000	0.0291	0.0176	0.0438	0.0311	0.078	0.077	665	772	575	668	1022	1188	94.00	143.00	0.18	0.17

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm<sup>2</sup> will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm<sup>2</sup> & 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 X2**

**Two Core XLPE Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 7098 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	kg/km	kg/km	kg/km
1.5	0.7	0.3	1.4	--	1.24	1.80	12.5	11.0	--	340	--	130
2.5	0.7	0.3	1.4	--	1.24	1.80	13.5	12.0	--	375	--	155
4	0.7	0.3	1.4	--	1.24	1.80	14.5	13.0	405	450	145	195
6	0.7	0.3	1.4	--	1.24	1.80	16.0	14.0	455	525	175	245
10	0.7	0.3	1.4	--	1.24	1.80	17.5	16.0	540	660	215	335
16	0.7	0.3	1.4	--	1.40	1.80	16.5	15.0	555	750	250	440
25	0.9	0.3	--	4.0 x 0.8	1.40	2.00	18.5	18.0	575	875	355	655
35	0.9	0.3	--	4.0 x 0.8	1.40	2.00	20.0	19.5	685	1110	440	865
50	1.0	0.3	--	4.0 x 0.8	1.40	2.00	22.0	21.5	810	1380	545	1115
70	1.1	0.3	--	4.0 x 0.8	1.56	2.00	25.5	24.5	1040	1860	710	1535
95	1.1	0.4	--	4.0 x 0.8	1.56	2.20	28.0	27.5	1275	2425	930	2070
120	1.2	0.4	--	4.0 x 0.8	1.56	2.20	30.5	30.0	1500	2945	1110	2555
150	1.4	0.4	--	4.0 x 0.8	1.72	2.20	33.0	32.0	1750	3540	1320	3105
185	1.6	0.5	--	4.0 x 0.8	1.72	2.40	36.0	35.5	2085	4310	1645	3970
240	1.7	0.5	--	4.0 x 0.8	1.88	2.60	40.5	40.0	2585	5475	2085	4975
300	1.8	0.6	--	4.0 x 0.8	2.04	2.80	43.5	43.5	3100	6770	2555	6220
400	2.0	0.6	--	4.0 x 0.8	2.36	3.00	49.5	59.0	3860	8580	3195	7915
500	2.2	0.7	--	4.0 x 0.8	2.52	3.40	54.0	54.0	4725	10755	4055	10085
630	2.4	0.7	--	4.0 x 0.8	2.68	3.60	60.0	60.0	5775	13635	5035	12895

**Electrical Data**

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 90°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
						In Ground		In duct		In Air					
						Amps	Amps	Amps	Amps	Amps	Amps				
mm <sup>2</sup>	/km	/km	/km	/km	/km	Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
1.5	--	12.1	--	15.43	0.106	--	31	--	27	--	27	--	0.21	--	26.73
2.5	--	7.41	--	9.45	0.099	--	41	--	35	--	36	--	0.36	--	16.37
4	7.41	4.61	9.502	5.88	0.093	42	54	36	45	38	48	0.38	0.57	16.46	10.19
6	4.61	3.08	5.911	3.93	0.089	55	67	46	56	50	61	0.56	0.86	10.24	6.81
10	3.08	1.83	3.9494	2.33	0.084	68	89	57	75	64	83	0.94	1.43	6.84	4.04
16	1.91	1.15	2.42	1.47	0.081	89	115	74	96	83	108	1.50	2.29	4.19	2.55
25	1.20	0.727	1.54	0.927	0.081	114	147	95	122	109	140	2.35	3.58	2.67	1.61
35	0.868	0.524	1.11	0.668	0.079	136	176	113	146	133	172	3.29	5.01	1.93	1.17
50	0.641	0.387	0.822	0.494	0.078	161	208	134	173	162	208	4.70	7.15	1.43	0.87
70	0.443	0.268	0.568	0.342	0.074	197	253	164	211	204	262	6.58	10.01	0.99	0.61
95	0.32	0.193	0.411	0.247	0.073	235	302	196	252	251	322	8.93	13.59	0.72	0.45
120	0.253	0.153	0.325	0.197	0.072	266	340	222	284	287	368	11.28	17.16	0.58	0.36
150	0.206	0.124	0.265	0.16	0.073	296	379	248	317	328	419	14.10	21.45	0.48	0.30
185	0.164	0.0991	0.211	0.128	0.072	335	425	281	357	379	482	17.39	26.46	0.39	0.25
240	0.125	0.0754	0.162	0.0989	0.071	385	486	324	409	448	566	22.56	34.32	0.31	0.21
300	0.100	0.0601	0.130	0.0800	0.071	432	541	364	456	513	644	28.20	42.90	0.26	0.19
400	0.0778	0.0470	0.102	0.0641	0.070	487	602	412	508	593	734	37.60	57.20	0.21	0.16
500	0.0605	0.0366	0.0809	0.0519	0.070	548	665	463	562	683	831	47.00	71.50	0.19	0.15
630	0.0469	0.0283	0.0644	0.0424	0.070	612	728	518	616	784	936	59.22	90.09	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm<sup>2</sup> will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm<sup>2</sup> & 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 X3**

**Three Core XLPE Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 7098 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	mm	kg/km Al	kg/km Cu	kg/km Al
1.5	0.7	0.3	1.4	--	1.24	1.80	13.0	11.5	--	380	--	155
2.5	0.7	0.3	1.4	--	1.24	1.80	14.0	12.5	--	435	--	190
4	0.7	0.3	1.4	--	1.24	1.80	15.0	13.5	445	520	170	245
6	0.7	0.3	1.4	--	1.24	1.80	17.0	14.5	505	615	210	315
10	0.7	0.3	1.4	--	1.24	1.80	19.0	16.5	605	790	260	440
16	0.7	0.3	--	4.0 x 0.8	1.24	1.80	18.0	17.0	560	850	335	625
25	0.9	0.3	--	4.0 x 0.8	1.40	2.00	21.0	20.0	720	1170	480	925
35	0.9	0.3	--	4.0 x 0.8	1.40	2.00	23.0	22.0	890	1525	600	1235
50	1.0	0.3	--	4.0 x 0.8	1.40	2.00	25.0	24.5	1055	1910	750	1605
70	1.1	0.4	--	4.0 x 0.8	1.56	2.20	30.0	28.5	1400	2635	1030	2265
95	1.1	0.4	--	4.0 x 0.8	1.56	2.20	32.0	31.0	1705	3415	1290	3000
120	1.2	0.4	--	4.0 x 0.8	1.56	2.20	35.0	34.0	2015	4185	1560	3725
150	1.4	0.5	--	4.0 x 0.8	1.72	2.40	39.0	38.0	2415	5095	1920	4600
185	1.6	0.5	--	4.0 x 0.8	1.88	2.60	43.0	42.0	2930	6265	2375	5710
240	1.7	0.6	--	4.0 x 0.8	2.04	2.80	49.0	47.5	3635	7975	3025	7365
300	1.8	0.6	--	4.0 x 0.8	2.20	3.00	54.0	52.0	4380	9880	3710	9210
400	2.0	0.7	--	4.0 x 0.8	2.52	3.20	60.0	58.5	5450	12530	4660	11740
500	2.2	0.7	--	4.0 x 0.8	2.68	3.60	67.0	65.5	6720	15760	5885	14930
630	2.4	0.7	--	4.0 x 0.8	2.84	3.80	74.0	72.5	8220	20005	7320	19105

**Electrical Data**

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 90°C.		Approximate Reactance at 50Hz. /km	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
	/km Al	/km Cu	/km Al	/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
1.5	--	12.1	--	15.43	0.106	--	26	--	22	--	23	--	0.21	--	26.73
2.5	--	7.41	--	9.45	0.099	--	34	--	29	--	30	--	0.36	--	16.37
4	7.41	4.61	9.502	5.88	0.093	35	45	30	38	32	41	0.38	0.57	16.46	10.19
6	4.61	3.08	5.911	3.93	0.089	46	56	38	47	42	52	0.56	0.86	10.24	6.81
10	3.08	1.83	3.9494	2.33	0.084	57	74	48	62	54	70	0.94	1.43	6.84	4.04
16	1.91	1.15	2.42	1.47	0.081	74	95	61	79	69	89	1.50	2.29	4.19	2.55
25	1.20	0.727	1.54	0.927	0.081	95	122	79	102	93	119	2.35	3.58	2.67	1.61
35	0.868	0.524	1.11	0.668	0.079	114	146	94	122	114	147	3.29	5.01	1.93	1.17
50	0.641	0.387	0.822	0.494	0.078	134	173	112	144	138	179	4.70	7.15	1.43	0.87
70	0.443	0.268	0.568	0.342	0.074	164	212	137	177	175	226	6.58	10.01	0.99	0.61
95	0.32	0.193	0.411	0.247	0.073	197	254	164	212	216	279	8.93	13.59	0.72	0.45
120	0.253	0.153	0.325	0.197	0.072	223	287	187	240	249	320	11.28	17.16	0.58	0.36
150	0.206	0.124	0.265	0.16	0.073	249	321	209	269	284	365	14.10	21.45	0.48	0.30
185	0.164	0.0991	0.211	0.128	0.072	282	362	238	304	329	422	17.39	26.46	0.39	0.25
240	0.125	0.0754	0.162	0.0989	0.071	327	418	276	352	392	500	22.56	34.32	0.31	0.21
300	0.100	0.0601	0.130	0.080	0.071	369	469	312	396	452	574	28.20	42.90	0.26	0.19
400	0.0778	0.0470	0.102	0.0641	0.070	420	528	356	447	526	662	37.60	57.20	0.21	0.16
500	0.0605	0.0366	0.0809	0.0519	0.070	478	593	412	511	612	760	47.00	71.50	0.19	0.15
630	0.0469	0.0283	0.0644	0.0424	0.070	542	661	468	571	712	870	59.22	90.09	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm<sup>2</sup> will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm<sup>2</sup> & 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 X5

**3½ Core XLPE Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to  
IS : 7098 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 <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm <sup>2</sup>	mm	mm						mm	mm	mm
										Al	Cu	Al	Cu
25	16	0.9	0.7	0.3	4.0 x 0.8	1.40	2.00	22.5	21.5	805	1350	540	1080
35	16	0.9	0.7	0.3	4.0 x 0.8	1.40	2.00	24.5	35.5	980	1705	650	1380
50	25	1.0	0.9	0.3	4.0 x 0.8	1.40	2.00	27.0	26.0	1200	2205	830	1835
70	35	1.1	0.9	0.4	4.0 x 0.8	1.56	2.20	31.0	30.0	1550	2995	1145	2590
95	50	1.1	1.0	0.4	4.0 x 0.8	1.56	2.20	34.5	33.5	1925	3920	1455	3450
120	70	1.2	1.1	0.4	4.0 x 0.8	1.72	2.20	38.5	37.0	2335	4910	1795	4370
150	70	1.4	1.1	0.5	4.0 x 0.8	1.72	2.40	42.0	41.0	2730	5820	2165	5255
185	95	1.6	1.1	0.5	4.0 x 0.8	1.88	2.60	46.5	45.5	3325	7230	2700	6610
240	120	1.7	1.2	0.6	4.0 x 0.8	2.04	2.80	52.5	51.5	4115	9180	3445	8505
300	150	1.8	1.4	0.6	4.0 x 0.8	2.20	3.00	57.5	56.5	4960	11350	4205	10595
400	185	2.0	1.6	0.7	4.0 x 0.8	2.52	3.40	65.5	65.0	6230	14420	5365	13560
500	240	2.2	1.7	0.7	4.0 x 0.8	2.68	3.60	72.5	72.0	7655	18145	6725	17215
630	300	2.4	1.8	0.7	4.0 x 0.8	3.00	4.00	82.0	81.0	9485	23105	8465	22085

Electrical Data

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 90°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
						In Ground		In Duct		In Air					
						/km	/km	/km	/km	/km	Amps	Amps	Amps	Amps	Amps
mm <sup>2</sup>	Al	Cu	Al	Cu		Al	Cu	Al	Cu	Al	Cu	Al	Cu	Al	Cu
25	1.20	0.727	1.54	0.927	0.081	95	122	79	102	93	119	2.35	3.58	2.67	1.61
35	0.868	0.524	1.11	0.668	0.079	114	146	94	122	114	147	3.29	5.01	1.93	1.17
50	0.641	0.387	0.822	0.494	0.078	134	173	112	144	138	179	4.70	7.15	1.43	0.87
70	0.443	0.268	0.568	0.342	0.074	164	212	137	177	175	226	6.58	10.01	0.99	0.61
95	0.320	0.193	0.411	0.247	0.073	197	254	164	212	216	279	8.93	13.59	0.72	0.45
120	0.253	0.153	0.325	0.197	0.072	223	287	187	240	249	320	11.28	17.16	0.58	0.36
150	0.206	0.124	0.265	0.16	0.073	249	321	209	269	284	365	14.10	21.45	0.48	0.30
185	0.164	0.0991	0.211	0.128	0.072	282	362	238	304	329	422	17.39	26.46	0.39	0.25
240	0.125	0.0754	0.162	0.0989	0.071	327	418	276	352	392	500	22.56	34.32	0.31	0.21
300	0.100	0.0601	0.13	0.08	0.071	369	469	312	396	452	574	28.20	42.90	0.26	0.19
400	0.0778	0.0470	0.102	0.0641	0.070	420	528	356	447	526	662	37.60	57.20	0.21	0.16
500	0.0605	0.0366	0.0809	0.0519	0.070	478	593	412	511	612	760	47.00	71.50	0.19	0.15
630	0.0605	0.0366	0.0644	0.0424	0.070	542	661	468	571	712	870	59.22	90.09	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	Depth of Laying	: 75cm
Ground Temperature	: 30°C	Thermal Resistivity of Soil	: 150°C-cm/W

**TABLE X5**

**Four Core XLPE Insulated Armoured & Unarmoured Cable with Aluminium / Copper Conductor Confirming to IS : 7098 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	kg/km	kg/km	kg/km
1.5	0.7	0.3	1.4	--	1.24	1.80	14.0	12.0	--	410	--	180
2.5	0.7	0.3	1.4	--	1.24	1.80	15.0	13.0	--	480	--	230
4	0.7	0.3	1.4	--	1.24	1.80	16.0	14.5	490	585	200	300
6	0.7	0.3	1.4	--	1.24	1.80	17.5	16.0	570	715	250	390
10	0.7	0.3	1.4	--	1.40	1.80	20.0	18.0	700	940	315	555
16	0.7	0.3	--	4.0 x 0.8	1.40	1.80	20.0	19.0	665	1045	410	790
25	0.9	0.3	--	4.0 x 0.8	1.40	2.00	23.5	22.5	875	1470	595	1195
35	0.9	0.3	--	4.0 x 0.8	1.40	2.00	26.0	25.0	1085	1930	750	1595
50	1.0	0.3	--	4.0 x 0.8	1.56	2.00	29.0	28.0	1330	2470	945	2085
70	1.1	0.4	--	4.0 x 0.8	1.56	2.20	33.5	32.5	1725	3375	1305	2955
95	1.1	0.4	--	4.0 x 0.8	1.56	2.20	36.5	35.5	2110	4395	1645	3930
120	1.2	0.5	--	4.0 x 0.8	1.72	2.40	40.5	40.0	2575	5465	2055	4945
150	1.4	0.5	--	4.0 x 0.8	1.88	2.60	45.0	44.0	3060	6635	2510	6080
185	1.6	0.5	--	4.0 x 0.8	2.04	2.80	50.0	49.0	3735	8185	3105	7555
240	1.7	0.6	--	4.0 x 0.8	2.20	3.00	56.0	55.5	4665	10450	3960	9745
300	1.8	0.7	--	4.0 x 0.8	2.36	3.20	62.5	62.0	5670	13005	4890	12225
400	2.0	0.7	--	4.0 x 0.8	2.68	3.60	70.0	69.5	7010	16450	6170	15615
500	2.2	0.7	--	4.0 x 0.8	2.84	3.80	78.0	78.0	8675	20735	7730	19790
630	2.4	0.7	--	4.0 x 0.8	3.00	4.00	87.5	87.0	10685	26400	9635	25350

**Electrical Data**

Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.		Approximate AC Resistance at Max. Operating Temperature 90°C.		Approximate Reactance at 50Hz.	Current Rating						Short Circuit Rating for 1sec.		Voltage Drop	
	/km Al	/km Cu	/km Al	/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
1.5	--	12.1	--	15.43	0.106	--	26	--	22	--	23	--	0.21	--	26.73
2.5	--	7.41	--	9.45	0.099	--	34	--	29	--	30	--	0.36	--	16.37
4	7.41	4.61	9.50	5.88	0.093	35	45	30	38	32	41	0.38	0.57	16.46	10.19
6	4.61	3.08	5.91	3.93	0.089	46	56	38	47	42	52	0.56	0.86	10.24	6.81
10	3.08	1.83	3.95	2.33	0.084	57	74	48	62	54	70	0.94	1.43	6.84	4.04
16	1.91	1.15	2.420	1.470	0.081	74	95	61	79	69	89	1.50	2.29	4.19	2.55
25	1.2	0.727	1.540	0.927	0.081	95	122	79	102	93	119	2.35	3.58	2.67	1.61
35	0.868	0.524	1.110	0.668	0.079	114	146	94	122	114	147	3.29	5.01	1.93	1.17
50	0.641	0.387	0.822	0.494	0.078	134	173	112	144	138	179	4.70	7.15	1.43	0.87
70	0.443	0.268	0.568	0.342	0.074	164	212	137	177	175	226	6.58	10.01	0.99	0.61
95	0.320	0.193	0.411	0.247	0.073	197	254	164	212	216	279	8.93	13.59	0.72	0.45
120	0.253	0.153	0.325	0.197	0.072	223	287	187	240	249	320	11.28	17.16	0.58	0.36
150	0.206	0.124	0.265	0.160	0.073	249	321	209	269	284	365	14.10	21.45	0.48	0.30
185	0.164	0.0991	0.211	0.128	0.072	282	362	238	304	329	422	17.39	26.46	0.39	0.25
240	0.125	0.0754	0.162	0.099	0.071	327	418	276	352	392	500	22.56	34.32	0.31	0.21
300	0.100	0.0601	0.130	0.080	0.071	369	469	312	396	452	574	28.20	42.90	0.26	0.19
400	0.0778	0.047	0.102	0.064	0.070	420	528	356	447	526	662	37.60	57.20	0.21	0.16
500	0.0605	0.0366	0.081	0.052	0.070	478	593	412	511	612	760	47.00	71.50	0.19	0.15
630	0.0469	0.0283	0.064	0.042	0.070	542	661	468	571	712	870	59.22	90.09	0.16	0.14

- The above data is indicative & may be changed without any prior information.
- Conductors up-to & including 10mm<sup>2</sup> will be Non-compacted & Circular Shaped.
- Conductors Sizes 16mm<sup>2</sup> & 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 X6**

**XLPE Insulated Armoured & Unarmoured Control Cable with Copper Conductor of 1.5 mm<sup>2</sup> Confirming to IS : 7098 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 <sup>2</sup>	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
2 x 1.5	0.7	0.3	1.4	--	1.24	1.80	12.5	11.0	340	130
3 x 1.5	0.7	0.3	1.4	--	1.24	1.80	13.0	11.5	380	155
4 x 1.5	0.7	0.3	1.4	--	1.24	1.80	14.0	12.0	410	180
5 x 1.5	0.7	0.3	1.4	--	1.24	1.80	15.0	13.0	465	210
6 x 1.5	0.7	0.3	1.4	--	1.24	1.80	16.0	14.0	515	240
7 x 1.5	0.7	0.3	1.4	--	1.24	1.80	16.0	14.0	535	255
10 x 1.5	0.7	0.3	1.4	--	1.24	1.80	19.0	17.0	690	345
12 x 1.5	0.7	0.3	1.4	--	1.24	1.80	19.5	17.5	745	385
14 x 1.5	0.7	0.3	1.4	--	1.40	1.80	20.5	18.5	830	430
16 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	1.80	20.5	19.0	735	480
19 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	21.5	20.0	820	545
24 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	24.5	23.5	990	690
27 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	25.0	24.0	1050	755
30 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	26.0	25.0	1135	820
37 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	28.0	26.5	1305	970
44 x 1.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	31.0	30.0	1515	1135
52 x 1.5	0.7	0.3	--	4.0 x 0.8	1.56	2.20	32.5	31.0	1725	1300
61 x 1.5	0.7	0.4	--	4.0 x 0.8	1.56	2.20	34.5	34.0	1970	1530

**Electrical Data**

No. of Cores x Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.	Approximate AC Resistance at Max. Operating Temperature 90°C.	Approximate Reactance at 50Hz.	Current Rating			Short Circuit Rating for 1sec.	Voltage Drop
				In Ground	In Duct	In Air		
No x mm <sup>2</sup>	/km	/km	/km	Amps	Amps	Amps	kA(rms)	V/A/km
2 x 1.5	12.1	15.43	0.106	31	27	27	0.21	26.73
3 x 1.5	12.1	15.43	0.106	26	22	23	0.21	26.73
4 x 1.5	12.1	15.43	0.106	26	22	23	0.21	26.73
5 x 1.5	12.1	15.43	0.106	26	22	23	0.21	26.73
6 x 1.5	12.1	15.43	0.106	20	18	18	0.21	26.73
7 x 1.5	12.1	15.43	0.106	20	17	17	0.21	26.73
10 x 1.5	12.1	15.43	0.106	17	15	15	0.21	26.73
12 x 1.5	12.1	15.43	0.106	16	14	14	0.21	26.73
14 x 1.5	12.1	15.43	0.106	16	14	13	0.21	26.73
16 x 1.5	12.1	15.43	0.106	15	13	12	0.21	26.73
19 x 1.5	12.1	15.43	0.106	14	12	12	0.21	26.73
24 x 1.5	12.1	15.43	0.106	13	11	11	0.21	26.73
27 x 1.5	12.1	15.43	0.106	12	10	10	0.21	26.73
30 x 1.5	12.1	15.43	0.106	12	10	10	0.21	26.73
37 x 1.5	12.1	15.43	0.106	11	9	9	0.21	26.73
44 x 1.5	12.1	15.43	0.106	10	8	9	0.21	26.73
52 x 1.5	12.1	15.43	0.106	10	8	8	0.21	26.73
61 x 1.5	12.1	15.43	0.106	9	8	8	0.21	26.73

- 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 X7

XLPE Insulated Armoured & Unarmoured Control Cable with Copper Conductor of 2.5 mm<sup>2</sup> Confirming to IS : 7098 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 <sup>2</sup>	mm	mm	mm	mm	mm	mm	mm	mm	kg/km	kg/km
2 x 2.5	0.7	0.3	1.4	--	1.24	1.80	13.5	12.0	375	155
3 x 2.5	0.7	0.3	1.4	--	1.24	1.80	14.0	12.5	435	190
4 x 2.5	0.7	0.3	1.4	--	1.24	1.80	15.0	13.0	485	230
5 x 2.5	0.7	0.3	1.4	--	1.24	1.80	16.0	14.0	545	270
6 x 2.5	0.7	0.3	1.4	--	1.24	1.80	17.0	15.0	620	305
7 x 2.5	0.7	0.3	1.4	--	1.24	1.80	17.0	15.0	645	335
10 x 2.5	0.7	0.3	--	4.0 x 0.8	1.24	1.80	20.0	19.0	690	455
12 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	1.80	21.0	19.5	770	515
14 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	1.80	21.5	20.0	855	580
16 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	22.5	21.5	950	670
19 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	23.5	22.5	1040	765
24 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	27.0	26.0	1280	945
27 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	27.5	26.5	1370	1030
30 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	28.5	27.5	1485	1125
37 x 2.5	0.7	0.3	--	4.0 x 0.8	1.40	2.00	30.5	29.5	1725	1345
44 x 2.5	0.7	0.4	--	4.0 x 0.8	1.56	2.20	35.0	34.0	2065	1625
52 x 2.5	0.7	0.4	--	4.0 x 0.8	1.56	2.20	36.0	35.0	2325	1870
61 x 2.5	0.7	0.4	--	4.0 x 0.8	1.56	2.20	38.0	37.0	2625	2145

**Electrical Data**

No. of Cores x Nominal Conductor Area	Max. DC Resistance of Conductor at 20°C.	Approximate AC Resistance at Max. Operating Temperature 90°C.	Approximate Reactance at 50Hz.	Current Rating			Short Circuit Rating for 1sec.	Voltage Drop
				In Ground	In Duct	In Air		
No x mm <sup>2</sup>	/km	/km	/km	Amps	Amps	Amps	kA(rms)	V/A/km
2 x 2.5	7.41	9.45	0.099	41	35	36	0.358	16.37
3 x 2.5	7.41	9.45	0.099	34	29	30	0.358	16.37
4 x 2.5	7.41	9.45	0.099	34	29	30	0.358	16.37
5 x 2.5	7.41	9.45	0.099	34	29	30	0.358	16.37
6 x 2.5	7.41	9.45	0.099	27	23	24	0.358	16.37
7 x 2.5	7.41	9.45	0.099	26	22	23	0.358	16.37
10 x 2.5	7.41	9.45	0.099	23	20	20	0.358	16.37
12 x 2.5	7.41	9.45	0.099	22	19	19	0.358	16.37
14 x 2.5	7.41	9.45	0.099	21	18	17	0.358	16.37
16 x 2.5	7.41	9.45	0.099	19	16	16	0.358	16.37
19 x 2.5	7.41	9.45	0.099	18	15	16	0.358	16.37
24 x 2.5	7.41	9.45	0.099	17	14	15	0.358	16.37
27 x 2.5	7.41	9.45	0.099	16	13	13	0.358	16.37
30 x 2.5	7.41	9.45	0.099	16	13	13	0.358	16.37
37 x 2.5	7.41	9.45	0.099	14	12	12	0.358	16.37
44 x 2.5	7.41	9.45	0.099	13	11	12	0.358	16.37
52 x 2.5	7.41	9.45	0.099	13	11	11	0.358	16.37
61 x 2.5	7.41	9.45	0.099	11	10	11	0.358	16.37

- 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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### Group Rating Factors for Circuits for Three Single Core Cables in Trefoil Formation

TABLE 8A : 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	0.77	0.81	0.86	0.88	0.89
3	0.67	0.71	0.78	0.81	0.83
4	0.61	0.64	0.72	0.76	0.80
5	0.57	0.60	0.69	0.74	0.77

TABLE 8B : Cables Laid in Single Way Ducts :

No. of Circuits	Spacing (Between Centers of Circuits)				
	Touching	15 cm	30 cm	45 cm	60 cm
2	0.78	0.83	0.87	0.90	0.91
3	0.66	0.73	0.78	0.82	0.85
4	0.59	0.67	0.74	0.78	0.82
5	0.55	0.63	0.70	0.76	0.80

TABLE 8C : Cables Laid on Racks/Trays in Covered Trench with Removable Covers where Air Circulation is Restricted, Trefoils are Separated by Two Cable Dia. Horizontally & the Trays are in Tiers with 30cm. Gap Between Them.

No. of Racks/Trays in Tiers	No. of Trefoils in Horizontal Formation		
	1	2	3
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 8D : Cables Laid as in 'C' But in Open Air :

No. of Racks	No. of Cables per Rack		
	1	2	3
1	1.00	0.98	0.96
2	1.00	0.95	0.93
3	1.00	0.94	0.92
6	1.00	0.93	0.90

### Group Rating Factors for Circuits for Multi-Core Cables

TABLE 9A : Cables Laid Inside Concrete Trench with Removable Covers, on Cable Trays where Air Circulation is Restricted. The Cables Spaced by One Cable Diameter & Trays in Tiers by 300mm. The Clearance of the Cable from the Wall is 25mm.

No. of Cable Trays in Tier	No. of Cables				
	1	2	3	6	9
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 9B : 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 Cable Trays in Tier	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 9C : 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 Tier	No. of Cables per Rack			
	2	3	6	9
1	0.84	0.8	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 9D : Cables Laid Direct in Ground in Horizontal Formation :

No. of Cables in Group	Spacing of Cables			
	Touching	15 cm	30 cm	45 cm
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 9E : Cables Laid Direct in Single Way Ducts/Pipes in Horizontal Formation :

No. of Cables in Group	Spacing of Cables			
	Touching	30 cm	45 cm	60 cm
2	0.85	0.90	0.92	0.94
3	0.75	0.83	0.86	0.88
4	0.69	0.79	0.83	0.86
5	0.65	0.76	0.80	0.84
6	0.62	0.73	0.79	0.83



## LV XLPE Catalogue

**TABLE 10A : Rating Factor for Variation in Depth of Laying in Ground for Multi-Core Cables :**

Depth of Laying (cm)	75	90	105	120	150	180	200	250	300
Up-to 25mm <sup>2</sup>	1.00	0.98	0.98	0.97	0.95	0.93	0.93	0.92	0.90
Above 25mm <sup>2</sup> & up-to 300mm <sup>2</sup>	1.00	0.98	0.97	0.95	0.93	0.92	0.91	0.89	0.88
Above 300mm <sup>2</sup>	1.00	0.98	0.96	0.95	0.93	0.91	0.90	0.88	0.87

**TABLE 10B : Rating Factor for Variation in Depth of Laying in Ground for Single Core Cables :**

Depth of Laying (cm)	75	90	105	120	150	180	200	250	300
Up-to 25mm <sup>2</sup>	1.00	0.98	0.97	0.96	0.94	0.93	0.92	0.90	0.90
Above 25mm <sup>2</sup> & up-to 300mm <sup>2</sup>	1.00	0.98	0.96	0.95	0.93	0.91	0.90	0.89	0.87
Above 300mm <sup>2</sup>	1.00	0.98	0.96	0.94	0.92	0.90	0.89	0.87	0.86

**TABLE 11 : Rating Factors for Variation in Ambient Air Temperature :**

Air Temperature (°C)	15	20	25	30	35	40	45	50	55	60
Rating Factor	1.22	1.18	1.14	1.10	1.05	1.00	0.95	0.89	0.84	0.77

**TABLE 12 : Rating Factors for Variation in Ground Temperature :**

Ground Temperature (°C)	15	20	25	30	35	40	45	50	55
Rating Factor	1.12	1.08	1.04	1.00	0.96	0.91	0.87	0.82	0.76

**TABLE 13 : Rating Factors for Variation in Thermal Resistivity of Soil (Multi-Cores Cables Laid Direct in the Ground) :**

Nominal Area of Conductor mm <sup>2</sup>	For Values of Thermal Resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.14	1.08	1.00	0.90	0.83	0.77
2.5	1.15	1.08	1.00	0.90	0.82	0.76
4	1.15	1.08	1.00	0.89	0.82	0.76
6	1.16	1.09	1.00	0.89	0.81	0.75
10	1.16	1.09	1.00	0.89	0.81	0.75
16	1.17	1.09	1.00	0.89	0.80	0.74
25	1.17	1.09	1.00	0.89	0.80	0.74
35	1.18	1.10	1.00	0.88	0.80	0.74
50	1.18	1.10	1.00	0.88	0.80	0.74
70	1.18	1.10	1.00	0.88	0.80	0.74
95	1.18	1.10	1.00	0.88	0.80	0.73
120	1.18	1.10	1.00	0.88	0.80	0.73
150	1.18	1.10	1.00	0.88	0.80	0.73
185	1.18	1.10	1.00	0.88	0.80	0.73
240	1.19	1.10	1.00	0.88	0.80	0.73
300	1.19	1.10	1.00	0.88	0.80	0.73
400	1.19	1.10	1.00	0.88	0.80	0.73
500	1.19	1.10	1.00	0.88	0.80	0.73
630	1.19	1.10	1.00	0.88	0.80	0.73

**TABLE 14 : 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 <sup>2</sup>	For Values of Thermal Resistivity of Soil in °C-cm/W					
	100	120	150	200	250	300
1.5	1.14	1.07	1.00	0.89	0.80	0.75
2.5	1.17	1.08	1.00	0.89	0.80	0.75
4	1.17	1.09	1.00	0.88	0.79	0.73
6	1.17	1.09	1.00	0.88	0.79	0.73
10	1.18	1.09	1.00	0.88	0.79	0.73
16	1.18	1.10	1.00	0.88	0.79	0.72
25	1.19	1.10	1.00	0.88	0.79	0.72
35	1.19	1.10	1.00	0.88	0.79	0.72
50	1.19	1.10	1.00	0.88	0.79	0.72
70	1.20	1.11	1.00	0.88	0.79	0.72
95	1.20	1.11	1.00	0.87	0.79	0.72
120	1.20	1.11	1.00	0.87	0.79	0.72
150	1.20	1.11	1.00	0.87	0.79	0.72
185	1.20	1.11	1.00	0.87	0.78	0.72
240	1.20	1.11	1.00	0.87	0.78	0.72
300	1.20	1.11	1.00	0.87	0.78	0.72
400	1.20	1.11	1.00	0.87	0.78	0.72
500	1.21	1.11	1.00	0.87	0.78	0.72
630	1.21	1.11	1.00	0.87	0.78	0.72
800	1.21	1.11	1.00	0.87	0.78	0.72
1000	1.21	1.11	1.00	0.87	0.78	0.72